

# **DJ-580T/E**

## **Service Manual**

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**ALINCO ELECTRONICS INC.**

# Specifications

## ■ General

Channel Spacing:	5, 10, 12.5, 15, 20, 25 KHz steps
Memory Channels:	42 Channels (40 total combination of VHF and UHF) 1 VHF Call Channel 1 UHF Call Channel
Signal Type:	F3E(FM)
Antenna Impedance:	50Ω unbalanced
Microphone Impedance:	2kΩ unbalanced
Speaker Impedance:	8Ω unbalanced
Power Supply Requirements:	13.8 Volts DC (Rated 9 volts DC)
Dimensions (Radio Only):	140(H) x 58(W) x 33(D) mm
Weight:	Approximately 410g
DTMF:	16 Button Key Pad
Subaudible Tones:	Encode and Decode installed

## ■ U.S. Frequency Coverage

The frequency coverage listed as follows applies to DJ-580T.

VHF Band:	144.000 ~ 147.995MHz (TX) 130.000 ~ 173.995MHz (RX) 110.000 ~ 142.995MHz (RX) Only after Modification
UHF Band:	440.000 ~ 449.995MHz (TX) 420.000 ~ 479.995MHz (RX)

## ■ European Frequency Coverage

The frequency coverage listed as follows applies to DJ-580E.

VHF Band:	144.000 ~ 145.995MHz (TX/RX)
UHF Band:	430.000 ~ 439.995MHz (TX/RX)

## ■ Transmitter

Output Power:	Approximately 2Watts with Standard EBP-20N Battery Approximately 5Watts with Optional EBP-22N Battery
Modulation System:	Variable reactance FM
Max. Frequency Deviation:	+/- 5kHz
Spurious Emission:	Less than 60dB below carrier
Tone Frequency:	67.0 to 250.3Hz (38 selections) DJ-580T (Subaudible Encoding Tone) DJ-580E (1,750Hz Tone Burst)
Microphone:	Electret Condenser
Operating Mode:	Simplex: Duplex: 5KHz steps minimum between 0 ~ 15.995MHz from receive frequency.
CTCSS Encoder:	Built-in and included as standard for DJ-580T
CTCSS Decoder:	Built-in and included as standard for DJ-580T

## ■ Receiver Specifications

Receiver System:	Superheterodyne, Dual Conversion
Sensitivity:	12dB SINAD less than -15dB $\mu$ V
Intermediate Frequency:	VHF — 1st IF 55.05MHz 2nd IF 455kHz UHF — 1st IF 23.05MHz 2nd IF 455kHz
Audio Power Output:	250mW (at 10% T.H.D.)
Speaker Impedance:	8 $\Omega$

# Circuit Description

## 1. Receiver System

VHF and UHF receiver systems are the double superheterodyne. In VHF receiver system, the first IF is 55.05 MHz and the second IF is 455KHz. In UHF receiver system, the first IF is 23.05 MHz and the second IF is 455KHz.

### 1.1 Front End

#### **VHF:**

The signal from the antenna is passed through a duplexer and an antenna switch, and then input to the RF coil L418.

The signal from L418 is amplified by Q416 and led to the band pass filter (L420, L421), and led to the first mixer base of Q417.

#### **UHF:**

The signal from the antenna is passed through a duplexer and an antenna switch, and then input to the RF coil L405.

The signal from L405 is amplified by Q404 and led to the band pass filter (L406, L407), passed through the band pass filter (L408, L409), and then led to the first mixer base of Q406.

### 1.2 First Mixer

#### **VHF:**

The signal (fo) is mixed with the first local oscillator signal (fo+55.05MHz) from the PLL circuit by the first-stage mixer Q417 and so is converted into the first IF signal.

The unwanted frequency band of the first IF signal is eliminated by the monolithic crystal filter (L423, L424, XF402).

#### **UHF:**

The signal (fo) is mixed with the first local oscillator signal (fo-23.05MHz) from the PLL circuit by the first-stage mixer Q406 and so is converted into the first IF signal.

The unwanted frequency band of the first IF signal is eliminated by the monolithic crystal filter (XF401).

### 1.3 IF Amplifier

#### **VHF:**

The first IF signal is amplified by Q418 and Q107, and input to pin 20 of IC102, where it is mixed with the second local oscillator signal (54.595MHz) and so is converted into the second IF signal (455KHz). The second IF signal is output from pin4 of IC102, and unwanted frequency band of the second IF signal is eliminated by a ceramic filter (FL102), and input to pin6 of IC102.

The resulting signal is then amplified by the second IF limiting amplifier, and detected by quadrature circuit, and the audio signal is output from pin11 of IC102.

#### **UHF:**

The first IF signal is amplified by Q403 and Q101, and input to pin 20 of IC101, where it is mixed with the second local oscillator signal (22.595MHz) and so is converted into the second IF signal (455KHz). The second IF signal is output from pin4 of IC101, and unwanted frequency band of the second IF signal is eliminated by a ceramic filter (FL101), and input to pin6 of IC101.

The resulting signal is then amplified by second IF limiting amplifier, and detected by quadrature circuit, and the audio signal is output from pin11 of IC101.

## 1.4 Audio Circuit

### **VHF:**

The signal from pin 11 of IC102 is filtered with de-emphasis circuit (consists of R156, C153, R157, C154), and led to the mute circuit Q109, passed through the AF variable resistor (VR102-B) and amplified by the power amplifier IC106 to drive the speaker.

### **UHF:**

The signal from pin 11 of IC102 is filtered with de-emphasis circuit (consists of R124, C119, R125, C120), and led to the mute circuit Q103, passed through the AF variable resistor (VR101-B) and amplified by the power amplifier IC106 to drive the speaker.

## 1.5 Squelch Circuit

### **VHF:**

The audio signal from pin11 of IC102 is passed through the squelch control variable resistor (VR102-A) and input to pin13 of IC102. The audio signal is amplified by IC102 and output to pin14. The desired noise of the audio signal is eliminated by the high pass filter consisting of C147 and R166, and amplified by Q108. The resulting signal is rectified by D105 and then input to pin15 of IC102. When the voltage of pin15 is below 0.7V, SDV goes to "Lo". When the voltage of pin15 is over 0.7V, SDV goes to "Hi". The SDV signal is input to pin14 of IC107.

### **UHF:**

The audio signal from pin11 of IC101 is passed through the squelch control variable resistor (VR101-A) and input to pin13 of IC101. The audio signal is amplified by IC101 and output to pin14. The desired noise of the audio signal is eliminated by the high pass filter consisting of C115 and R115, and amplified by Q102. The resulting signal is rectified by D101 and then input to pin15 of IC101. When the voltage of pin15 is below 0.7V, SDU goes to "Lo". When the voltage of pin15 is over 0.7V, SDU goes to "Hi". The SDU signal is input to pin15 of IC107.

## 1.6 S-meter Circuit

### **VHF:**

The DC voltage of pin12 of IC102 is passed through VR104 and input to pin75 of IC107. The DC voltage is digitized to control the LCD S-meter display.

### **UHF:**

The DC voltage of pin12 of IC101 is passed through VR103 and input to pin74 of IC107. The DC voltage is digitized to control the LCD S-meter display.

## 1.7 AM , AGC Circuit

### **VHF:**

AM audio signal from pin12 of IC102 is amplified by Q110, and supplied to pin 6 and pin7 of IC106. The S-meter signal from pin12 of IC102 is supplied to Q106. The gain of the second IF amplifier is controlled by the collector current of Q106, and the input level of pin 20 of IC102 is stabilized.

## 1.8 Cross Band Repeater Circuit

When the transceiver receives the VHF or UHF signal in the cross band repeater mode, it will be retransmitted from main band. The audio signal is passed through the cross band repeater switch Q105, and supplied to microphone amplifier IC105.

## 2. Transmitter System

### 2.1 Microphone Amplifier

#### ***VHF/UHF:***

The voice from the internal or external microphone is led to pre-emphasis circuit, and then input to the microphone amplifier IC105, which consists of two operational amplifiers.

The output from the microphone amplifier is passed through variable resistors VR106 (VHF) and VR105 (UHF) for modulation adjustment to varicap diode of the VCO, controlling the VCO frequency.

### 2.2 Power amplifier

#### ***VHF:***

The signal from VCO is amplified by a buffer amplifier Q420, and input to the power module pin1 of IC 402 . The amplified signal is output from pin5, and then passed through the low-pass filter and the antenna switch circuit. The unwanted harmonics frequency signal is eliminated by the low-pass filter in the duplexer and input to the antenna.

#### ***UHF:***

The signal from VCO is amplified by a buffer amplifier Q408, and input to the power module pin1 of IC 401. The amplified signal is output from pin5, and then passed through the low-pass filter and the antenna switch circuit. The unwanted harmonics frequency signal is eliminated by the low-pass filter in the duplexer and input to the antenna.

### 2.3 Automatic Power Control Circuit

#### ***VHF:***

The automatic power control(APC) circuit is used to obtain a stable transmission power. This circuit detects the transmission power by D409 in the low-pass filter consisting of L425, C514, C515, and C516. The detected DC voltage is supplied to APC circuit consisting of Q411, Q412, Q413, and D410. The detected voltage to Q411 is passed through Q412, Q413 and Q414, and then controls the emitter current of Q420.

#### ***UHF:***

The automatic power control(APC) circuit is used to obtain a stable transmission power. This circuit detects the transmission power by D408 in the low-pass filter consisting of L403, C421, C422, and C450. The detected DC voltage is supplied to APC circuit consisting of Q411, Q412, Q413, and D410. The detected voltage to Q411 is passed through Q412, Q413 and Q414, and then controls the collector voltage of Q408.

### 3. PLL Circuit

#### **VHF:**

Output frequency of PLL circuit is set by the serial data from microprocessor IC107.

The data (strobe, clock, data) are consisted of 16 bits serial data. The VCO output frequency is supplied to pin10 of IC404. The programmable divider in IC404 divides the VCO output frequency, and generates 5 or 6.25KHz.

PLL circuit generates TX frequency ( $f_o$ ) and RX frequency ( $f_o + 55.05\text{MHz}$ ).

#### **3.1 Reference Divider Circuit**

##### **VHF:**

The channel step is determined by the reference frequency.

6 channel steps (5, 10, 15, 12.5, 20, 25KHz) are obtained when the reference oscillation frequency (12.8MHz) is divided.

The reference frequency (5KHz) uses a channel step of 5, 10, 15, 20 or 25KHz.

The reference frequency (6.25KHz) uses the channel step of 12.5KHz. The frequencies multiplied by the even numbers of 12.5KHz use the reference frequency of 5KHz.

#### **3.2 Phase Comparison Circuit (P/C)**

##### **VHF:**

A comparison frequency is obtained when the VCO output is divided in IC404 (pulse swallow system-based PLL IC).

#### **3.3 PLL Loop Filter Circuit**

##### **VHF:**

The pulse wave output of charge pump is converted to DC voltage by PLL loop filter circuit, and supplied to D423, D424 of varicap diode in VCO unit.

#### **3.4 VCO Circuit**

##### **VHF:**

The VCO tune voltage is applied to the varicaps D423 and D424.

The frequency modulation is executed when the audio signal voltage is supplied to the varicaps D424 and D425.

#### **UHF:**

Output frequency of PLL circuit is set by the serial data from microprocessor IC107.

The data (strobe, clock, data) are consisted of 16 bits serial data. The VCO output frequency is supplied to pin10 of IC403. The programmable divider in IC403 divides the VCO output frequency, and generates 5 or 6.25KHz.

PLL circuit generates TX frequency ( $f_o$ ) and RX frequency ( $f_o - 23.05\text{MHz}$ ).

##### **UHF:**

The channel step is determined by reference frequency.

6 channel steps (5, 10, 15, 12.5, 20, 25KHz) are obtained when reference oscillation frequency (12.8MHz) is divided.

The reference frequency (5KHz) uses a channel step of 5, 10, 15, 20 or 25KHz.

The reference frequency (6.25KHz) uses the channel step of 12.5KHz. The frequencies multiplied by the even numbers of 12.5KHz use the reference frequency of 5KHz.

##### **UHF:**

A comparison frequency is obtained when the VCO output is divided in IC403 (pulse swallow system-based PLL IC).

##### **UHF:**

The pulse wave output of charge pump is converted to DC voltage by PLL loop filter circuit, and supplied to D421, D422 of varicap diode in VCO unit.

##### **UHF:**

The VCO tune voltage is applied to the varicaps D421 and D422.

The frequency modulation is executed when the audio signal voltage is supplied to the varicap D418.

## 4. DTMF Circuit

### 4.1 Decoder

The detected signal from pin11 of IC101 and IC102 is passed through VHF/UHF selector consisting of Q142 and Q111, and input to the DTMF decoder pin8 of IC108. The VHF/UHF selector is controlled by BND from pin42 of IC107. When the input signal is valid, the digital signal is output from pin1(D2), pin2(D1), pin15(D8) and pin16(D4) of IC108, and then input to pin48(DD2), pin47(DD1), pin50(DD8) and pin49(DD4) of IC107.

### 4.2 Encoder

The DTMF signal corresponding to the combination of the column and row is output from tone output pin17 of IC3. When using the DTMF keypad, IC107 pin31(IN0), pin32(IN1), pin33(IN2), pin34(IN3) and pin51(OT0), pin52(OT1), pin53(OT2), pin54(OT3) go to high impedance.

There are pull-up register(ROW) and pull-down register(COL) inside IC3. When the keyboard is pressed, ROW input and COL input are connected, and the input voltage goes to half level, then the DTMF is output. When the DTMF encoder is controlled by IC107, one of IN0, IN1, IN2 and IN3 goes to "High", and one of OT0, OT1, OT2 and OT3 goes to "Low". The DTMF signal is output corresponding to the input data.

## 5. Tone Squelch Circuit

### 5.1 Decoder

#### **VHF/UHF:**

The second IF signal from pin11 of IC101 and IC102, is passed through VHF/UHF selector consisting of Q142 and Q111, and input to the tone squelch decoder pin24 of IC701. The VHF/UHF selector is controlled by BND from pin42 of IC107.

When the tone squelch decoder IC701 decodes the input tone signal frequency as the programmed frequency, pin13 goes to "Low". The signal is input to pin16(DET) of IC107, and the squelch goes off.

When the Tone squelch decoder IC701 does not decode the input tone signal frequency as the programmed frequency, pin13 goes to "High". The signal is input to pin16(DET) of IC107, and the squelch goes on.

### 5.2 Encoder

#### **VHF:**

The tone signal is output from pin16 of IC701, and amplified at Q701, then output to the TO(MOV) terminal.

#### **UHF:**

The tone signal is output from pin16 of IC701, and amplified at Q701, then output to the TO(MOU) terminal.

## 6. 1750Hz Tone Burst Circuit

The 1750Hz Tone Burst signal is generated by IC107.

The signal is passed through the VR111, and supplied to MOV, MOU terminal.

※ Tone Burst Circuit is built in DJ-580E only.





## 8.2 LVI circuit

The 5VR is obtained by the stabilized power supply circuit IC103.

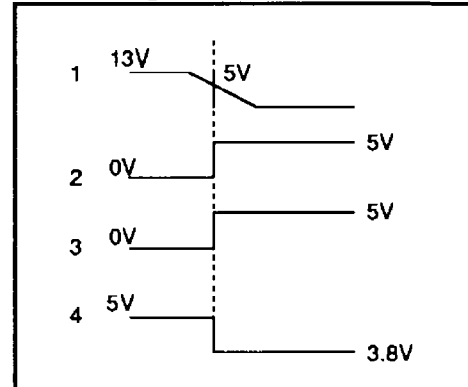
Voltage detector circuit Q115 detects a decrease in the 13V line when LVi output is changed from "Low" to "High".

Then LSW output in the microprocessor IC107 is changed from "High" to "Low".

LVi switch Q114 is turned on.

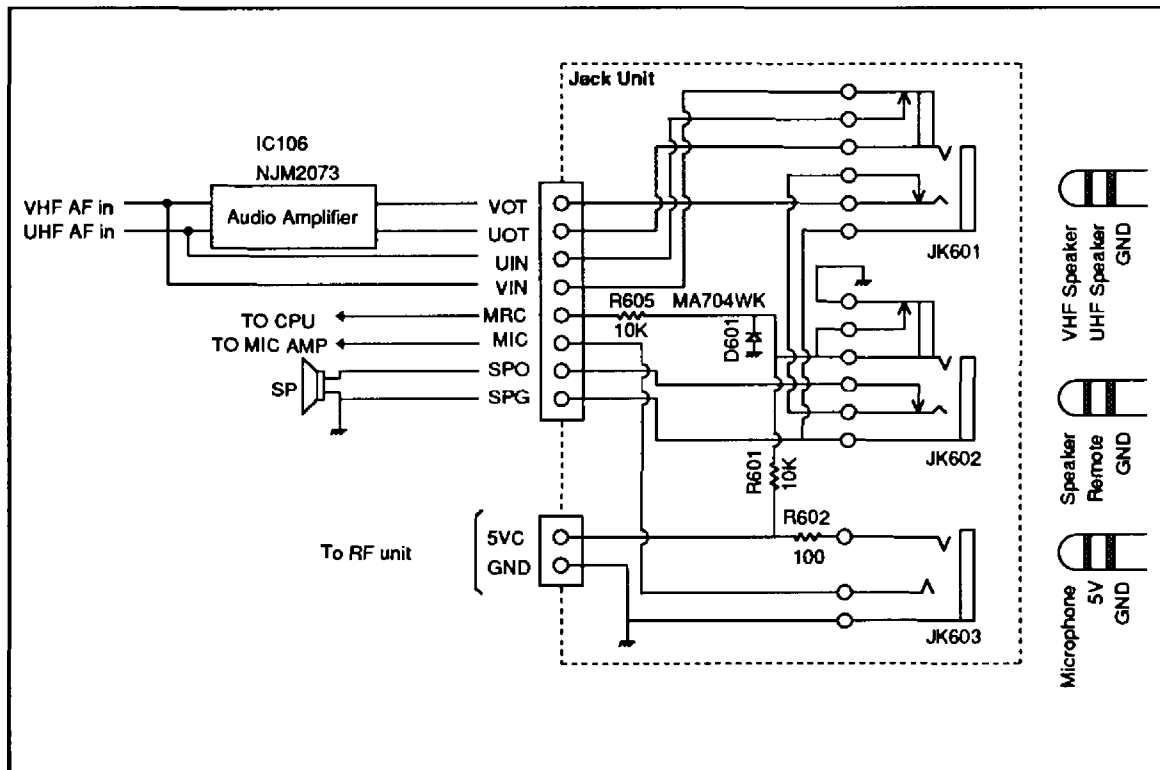
And then 5VR voltage is changed 5V to 3.8V.

## 8.3 Timing Chart



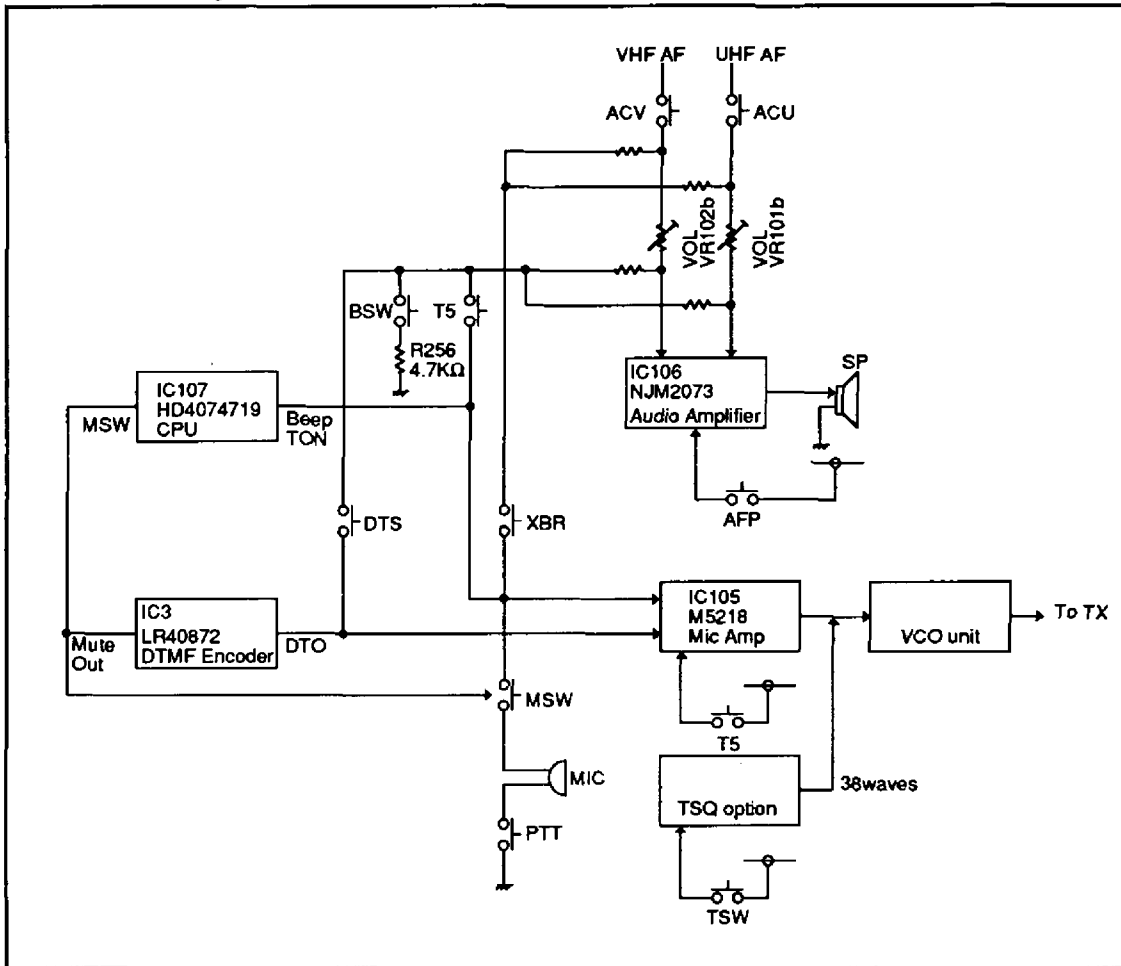
## 9. Jack Circuit

### Circuit Diagram



## 10. Signal Sequence Diagram

### 10.1 Block Diagram



### 10.2 Function Table

	BEEP	88.5Hz	DTMF	1750Hz
BSW	OFF: loud ON: small	OFF	—	—
XBR	OFF	—	OFF	OFF
DTS	—	—	ON: Transmitting	OFF
AFP	ON	Depends on Sub SQL	ON	Depends on Sub SQL
T5	OFF	ON	ON	ON

## 11. Terminal Function of Microprocessor

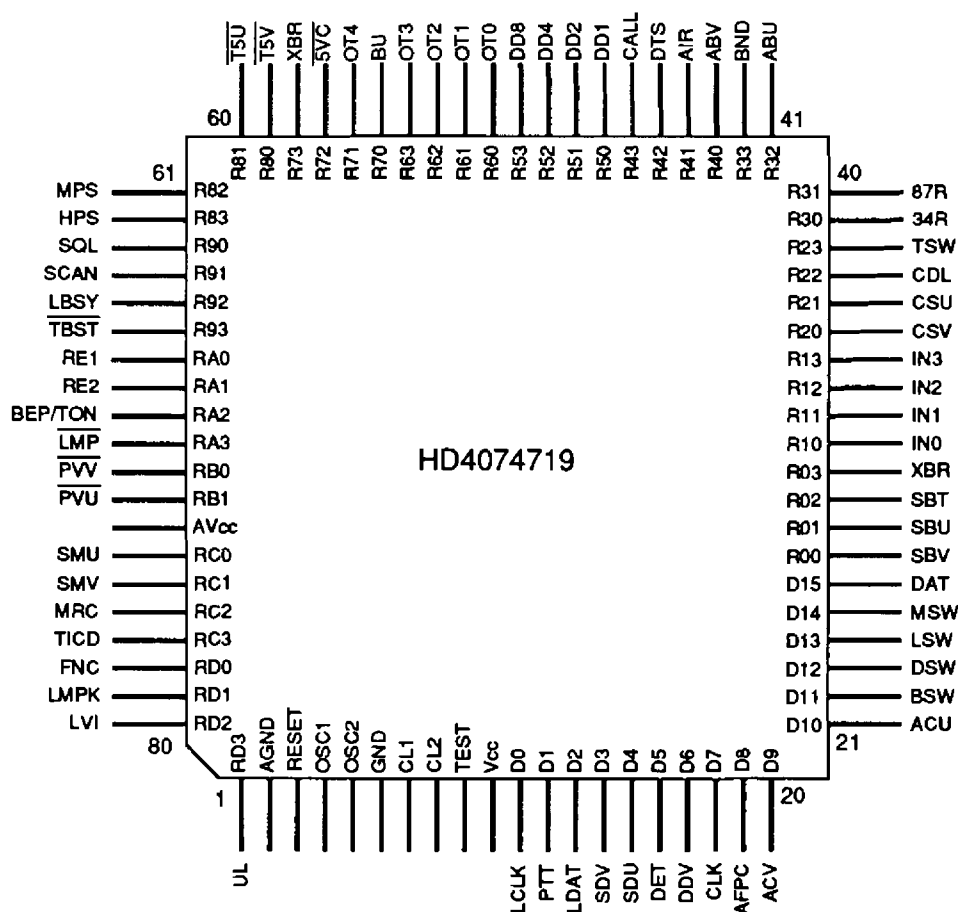
### 11.1 Function Table

Name	I/O	Description	Pin No.	Pin name	H	L
UL	I	Unlock detection signal input	1	RD3/AN7	unlocked	locked
			2	AGND		
	I		3	Reset		
			7	CL1		
			8	CL2		
			9	$\overline{\text{TEST}}$		
LCLK	O	LCD driver clock output	11	D0		usually set to Low
PTT	I	PTT switch input	12	D1	ON	OFF
LDAT	O	LCD driver data output	13	D2		usually set to Low
SDV	I	Signal detection input (VHF)	14	D3	detected	no signal
SDU	I	Signal detection input (UHF)	15	D4	detected	no signal
DET	I	Tone detection input	16	D5	undetected	detected
DDV	I	DTMF data valid input	17	D6	valid	invalid
CLK	O	PLL & CTCSS serial clock	18	D7		usually set to Low
AFPC	O	AF power amplifier on/off switch	19	D8	ON	OFF
ACV	O	Voice on/off switch (VHF)	20	D9	ON	OFF
ACU	O	Voice on/off switch (UHF)	21	D10	ON	OFF
BSW	O	Beep volume selector	22	D11	small	loud
DSW	O	DTMF IC power supply on/off switch	23	D12	ON	OFF
LSW	O	Battery low mode switch	24	D13	battery low	normal
MSW	O	Microphone on/off switch	25	D14	OFF	ON
DAT	O	PLL & CTCSS serial data output	26	D15		usually set to Low
SBV	O	PLL IC strobe (VHF)	27	R00		
SBU	O	PLL IC strobe (UHF)	28	R01		
SBT	O	CTCSS IC strobe	29	R02		
	I	800MHz も使われる 2700MHz 対応	30	R03		
IN0	I	Key matrix input 0	31	R10		
IN1	I	Key matrix input 1	32	R11		
IN2	I	Key matrix input 2	33	R12		
IN3	I	Key matrix input 3	34	R13		
CSV	O	LCD driver chip selection output (VHF)	35	R20		
CSU	O	LCD driver chip selection output (UHF)	36	R21		

Name	I/O	Description	Pin No.	Pin name	H	L
CDL	O	LCD driver command data	37	R22	command	data
TSW	O	Tone IC power supply on/off switch	38	R23	ON	OFF
34R	O	340MHz band RX on/off switch	39	R30	ON	OFF
87R	O	870MHz band RX on/off switch	40	R31	ON	OFF
ABU	O	UHF band on/off switch	41	R32	ON	OFF
BND	O	TONE/DTMF band selector	42	R33	VHF	UHF
ABV	O	UHF band on/off switch	43	R40	ON	OFF
AIR	O	Air band on/off switch	44	R41	air band	except air band
DTS	O	Mute signal during DTMF transmission	45	R42	normal	during DTMF transmission
CALL	I	Call key input	46	R43	OFF	ON
DD1	I	DTMF decord data input 1	47	R50/Vdisp	1	0
DD2	I	DTMF decord data input 2	48	R51	1	0
DD4	I	DTMF decord data input 4	49	R52	1	0
DD8	I	DTMF decord data input 8	50	R53	1	0
OT0	O	Key matrix output 0	51	R60/COMP	RX:H TX:Hi Z	
OT1	O	Key matrix output 1	52	R61/Vref		
OT2	O	Key matrix output 2	53	R62/TOE1		
OT3	O	Key matrix output 3	54	R63/TOE2		
BU	I	Backup mode input VCC < 3.2V: L	55	R70/INT0	normal	backup mode
OT4	O	Key matrix output & band plan	56	R71/INT1	RX:H TX:Hi Z	
5VC	O	+5V on/off	57	R72/INT2	Hi Z OFF	ON
XBR	O	Cross band repeater on/off switch	30	R73/INT3	OFF	ON
T5V	O	TX5V on/off (VHF)	59	R80/INT4	Hi Z OFF	ON
T5U	O	TX5V on/off (UHF)	60	R81/INT5	Hi Z OFF	ON
MPS	O	Middle power switch	61	R82/S01	high, low	middle power
HPS	O	High power switch	62	R83/S11	low, middle	high power
SQL	I	Squelch key input	63	R90/SCK1	OFF	ON
SCAN	I	Scan key input	64	R91/SCK2	OFF	ON
LBSY	I	LCD busy input	65	R92/S12	inhibited	permitted
TBST	I	Tone burst key input (DJ580E/ED)	66	R93/S02	OFF	ON
RE1	I	Rotary encoder input	67	RA0/ICT0		

Name	I/O	Description	Pin No.	Pin name	H	L
RE2	I	Rotary encoder input	68	RA1/ICT1		
BEP TON	O	Beep output Tone output (88.5 Hz only)	69	RA2/T0G		
LMP	O	Lamp on/off switch	70	RA3/BUZZ	Hi Z OFF	ON
PVV	O	PLL power supply on/off (VHF)	71	RB0/T0C	Hi Z OFF	ON
PVU	O	PLL power supply on/off (UHF)	72	RB1/T0D	Hi Z OFF	ON
SMU	I	S-meter (UHF)	74	RC0/AN0		
SMV	I	S-meter (VHF)	75	RC1/AN1		
MRC	I	Microphone remote control	76	RC2/AN2		
TICD	I	Tone squelch unit	77	RC3/AN3	nothing	equipped
FNC	I	Function key input	78	RD0/AN4	OFF	ON
LMPK	I	Lamp key input	79	RD1/AN5	OFF	ON
LVI	I	Low voltage input	80	RD2/AN6	Low voltage	normal

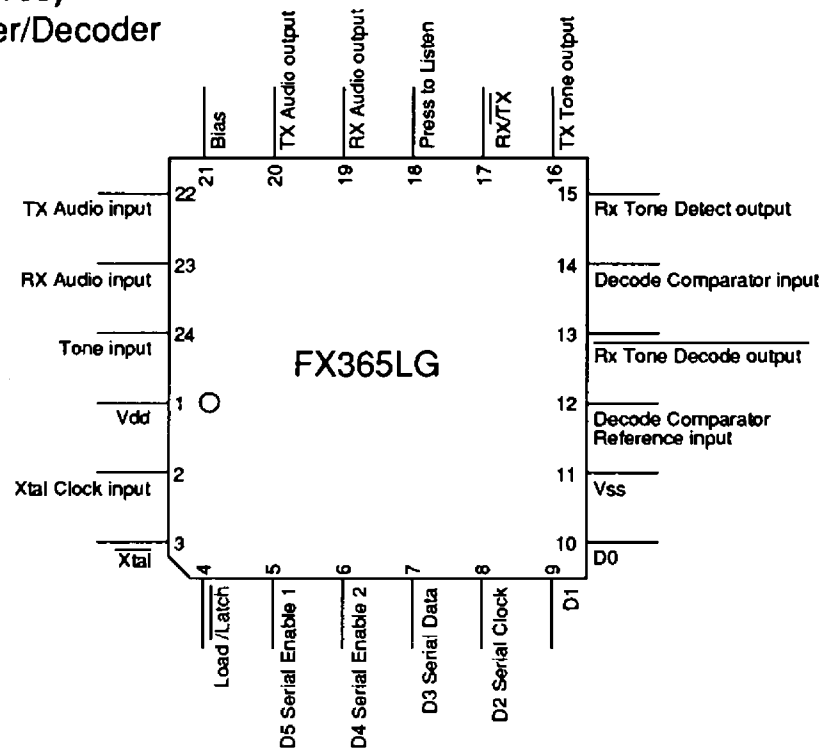
## 11.2 Terminal Connection of Microprocessor



# Semiconductor Data

## 1) FX365 (XA0108)

### CTCSS Encoder/Decoder



**Decode comparator Input:** This is the inverting input of the decode comparator. This pin is to be connected to the Rx TONE DETECT pin via an external integrator.

**Rx Tone Detect (O/P):** In Rx mode this pin will go to logic '1' during a successful decode. This pin is normally connected to the Decode Comparator input via the external integrator circuitry.

**Tx Tone O/P:** A low impedance emitter follower stage for sourcing the CTCSS sinewave under the control of the Rx/Tx pin. This O/P when not transmitting a tone may be biased to  $VDD/2 - 0.7V$  or O/C.

**Rx/Tx:** This input (in parallel mode) selects Rx or Tx modes. In serial mode this function is serially loaded. This pin is internally pulled to VDD via a 1 MΩ resistor.

**PTL:** In parallel Rx mode this pin operates as a 'press to listen' function by enabling the Rx audio path thus overriding the tone squelch function. In parallel Tx mode this pin reverses the phase of the transmitted CTCSS tone (squelch tail elimination). In serial mode this function is serially loaded. The phase reversal function should be applied by timing circuit to ensure correct system operation.

**Rx Audio Out:** This is the high pass filtered "Receive" audio output pin. This pin outputs audio when Rx TONE DECODE = 0, or PTL = 1 or NO TONE is programmed. In Tx mode this pin is biased to  $VDD/2$ .

**Tx Audio Out:** This is the high pass filtered "Transmit" audio output pin. In Tx mode this pin outputs audio present at the 'Tx AUDIO INPUT' pin. In Rx mode this pin is biased to  $VDD/2$ .

**Bias:** This pin is the output of an internally generated  $VDD/2$  bias level and would normally be externally decoupled to Vss via C6.

**Tx Audio I/P:** This is the Tx Audio input pin. In Tx mode audio may be prefiltered, using the Tx audio path, thus helping to avoid talk off due to intermodulation of speech frequencies with the transmitted CTCSS tone. The Tx audio path may also be used to prefiltered speech when using scramblers which introduce noise in the low frequency band. This pin is internally biased to  $VDD/2$ .

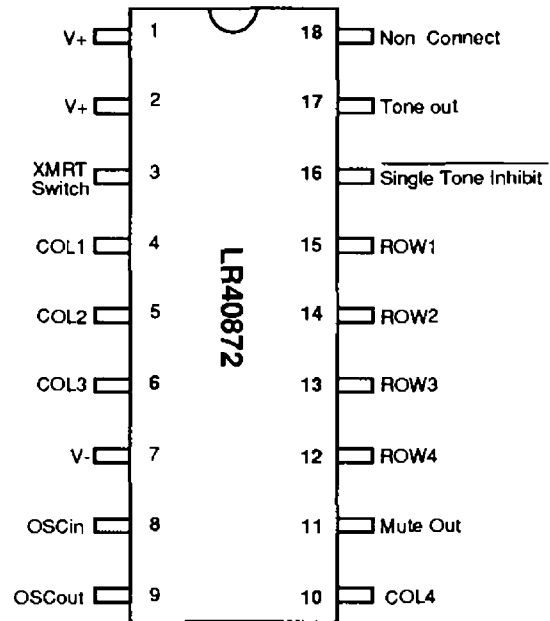
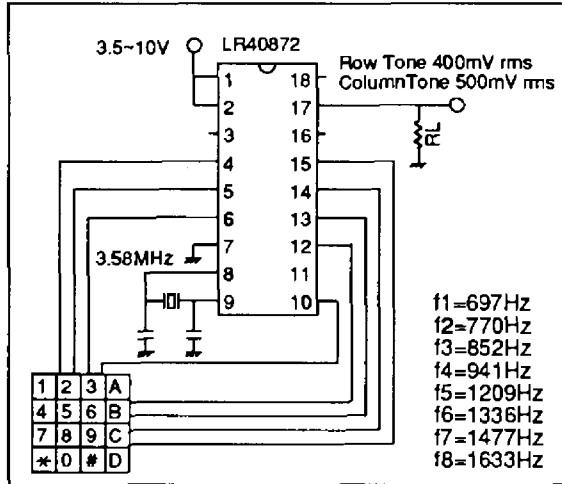
**Rx Audio Input:** This is the input to the audio high pass filter in Rx mode. This pin is internally biased to  $VDD/2$ .

**Tone Input:** This is the input to the CTCSS tone detector and is internally biased to  $VDD/2$ .

**2) LR40872 (XA0042)**

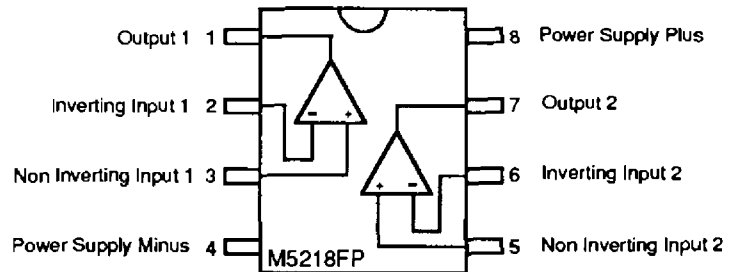
## Tone Dialer

## Test Circuit



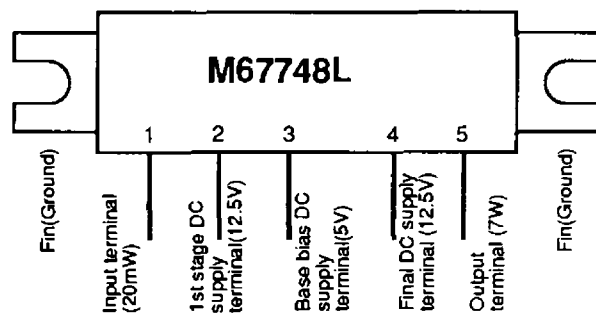
**3) M5218FP (XA0006)**

## Dual Low Noise Operational Amplifiers



**4) M67748L (XA0148)**

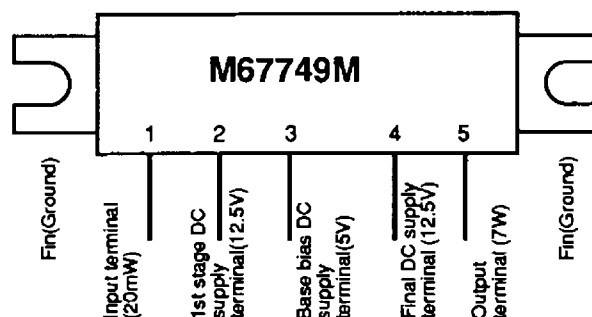
## 135 ~ 150MHz 7W RF Power Module





### 5) M67749M (XA0143)

430 ~ 450MHz 7W  
RF Power Module

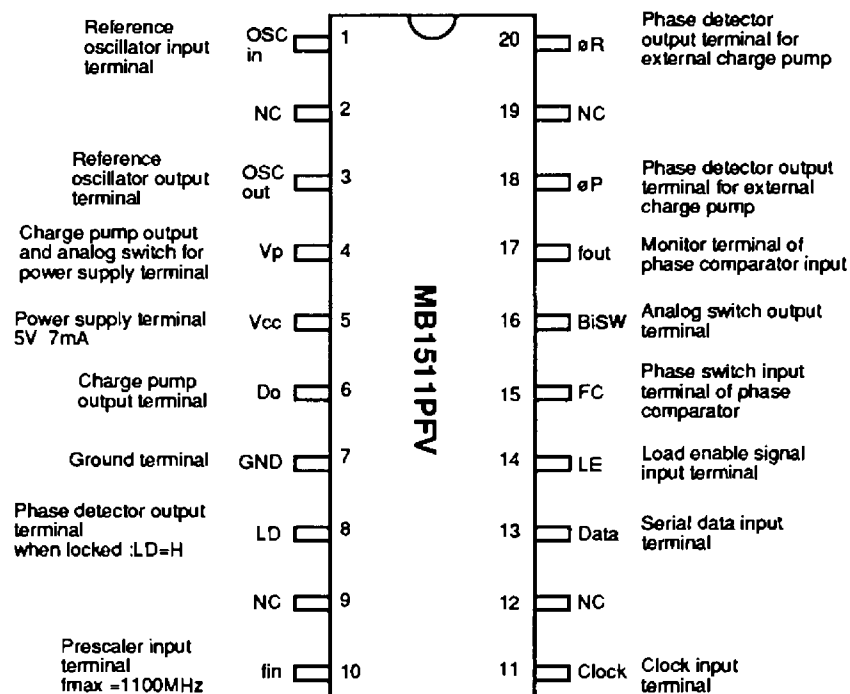


### 6) MB1511PFV (XA0173)

Frequency Synthesizer

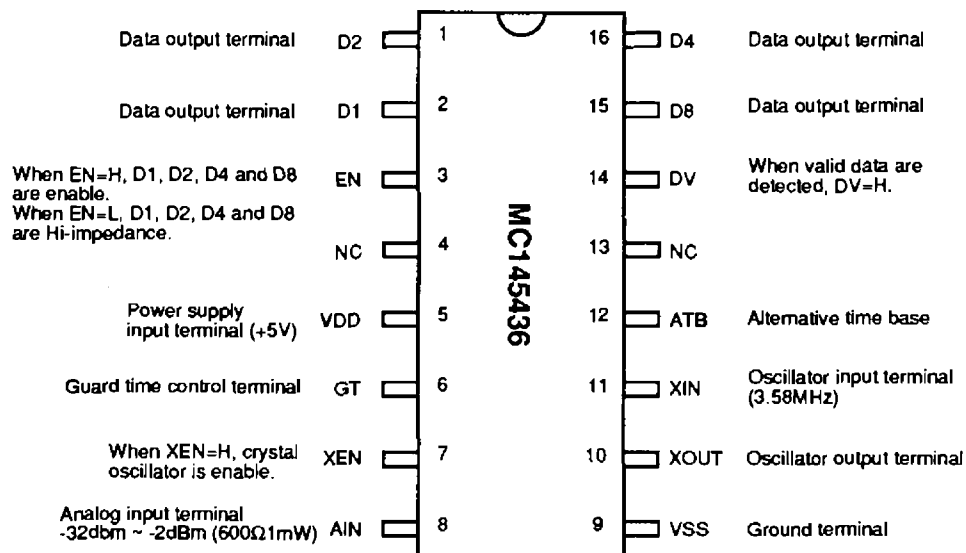
Function Table

FC input	P.D.input	Do output
High or Low	$f_r = f_p$	Hi Z
High	$f_r > f_p$	High
High	$f_r < f_p$	Low
Low	$f_r > f_p$	Low
Low	$f_r < f_p$	High

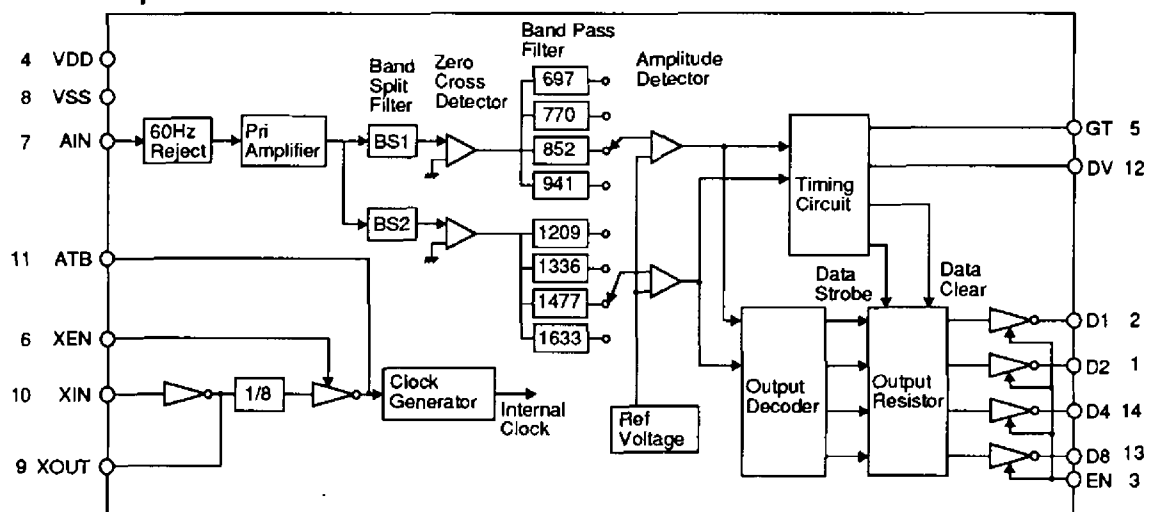


## 7) MC145436DWR (XA0105)

### DTMF Receiver



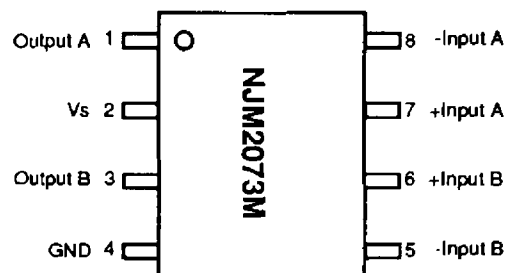
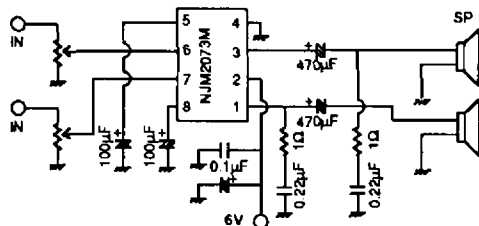
### Equivalent Circuit



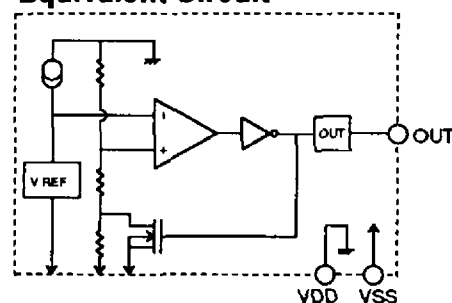
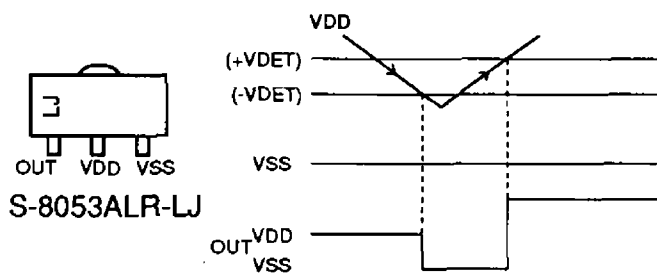
## 8) NJM2073M (XA0111)

### Dual Power Amplifiers

$V_s=4V$   $R_L=8\Omega$   $P_o=0.46W$

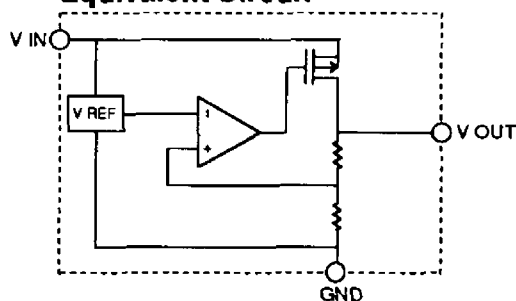
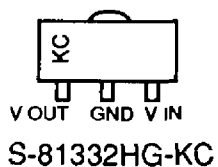


**9) S-8053ALR (XA0172)**  
C-MOS Voltage Detector



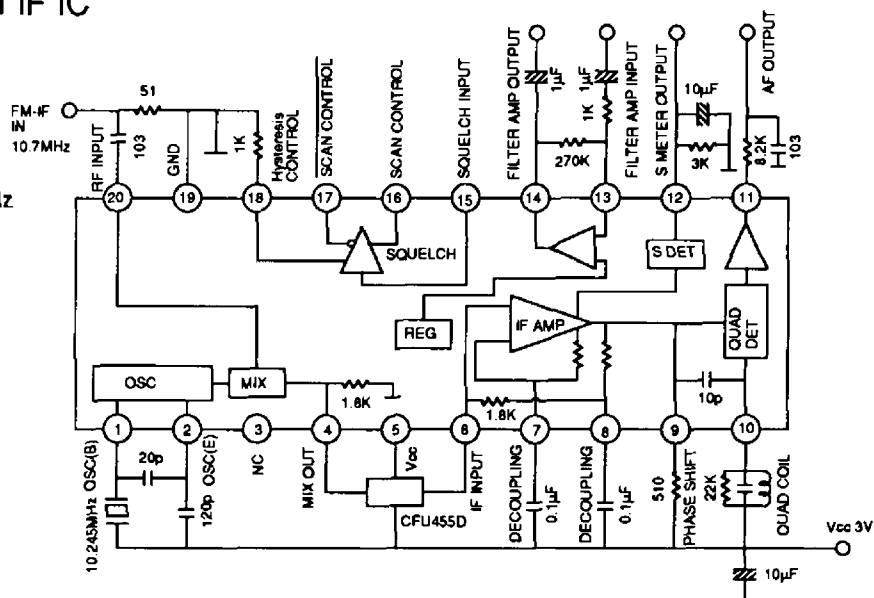
**10) S-81332HG (XA0182)**  
Voltage Regulator

V out=3.200V  
I out=30mA  
V in=15V  
I ss=16μA



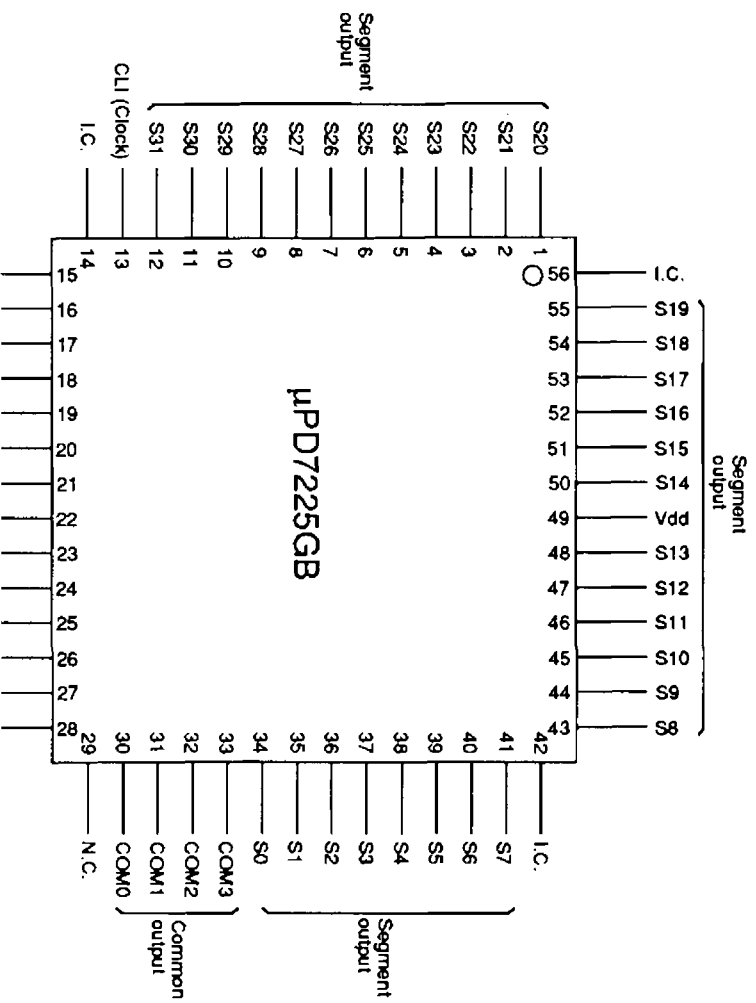
**11) TK10487MTR (XA0144)**  
Narrow Band FM IF IC

Vcc=3V  
F=10.7MHz  
Icc 5mA  
Limit 2μV -3dB  
Vo 180mV Dev=3KHz  
THD 1.0%



CL2(Clock) —  
 $\overline{\text{SYNC}}$ (Synchronous) —  
 Vlc1(LCD power supply) —  
 Vlc2(LCD power supply) —  
 Vlc3(LCD power supply) —  
 Vss(Ground) —  
 Vdd(+5V) —  
 $\overline{\text{SCK}}$ (Serial Clock) —  
 SI(Serial input) —  
 $\overline{\text{CS}}$ (Chip Select) —  
 $\overline{\text{BUSY}}$  —  
 C /  $\overline{\text{D}}$ (Command or Data) —  
 $\overline{\text{RESET}}$  —  
 I.C. —

# 12) $\mu$ PD7225GB (XA0141) LCD Driver

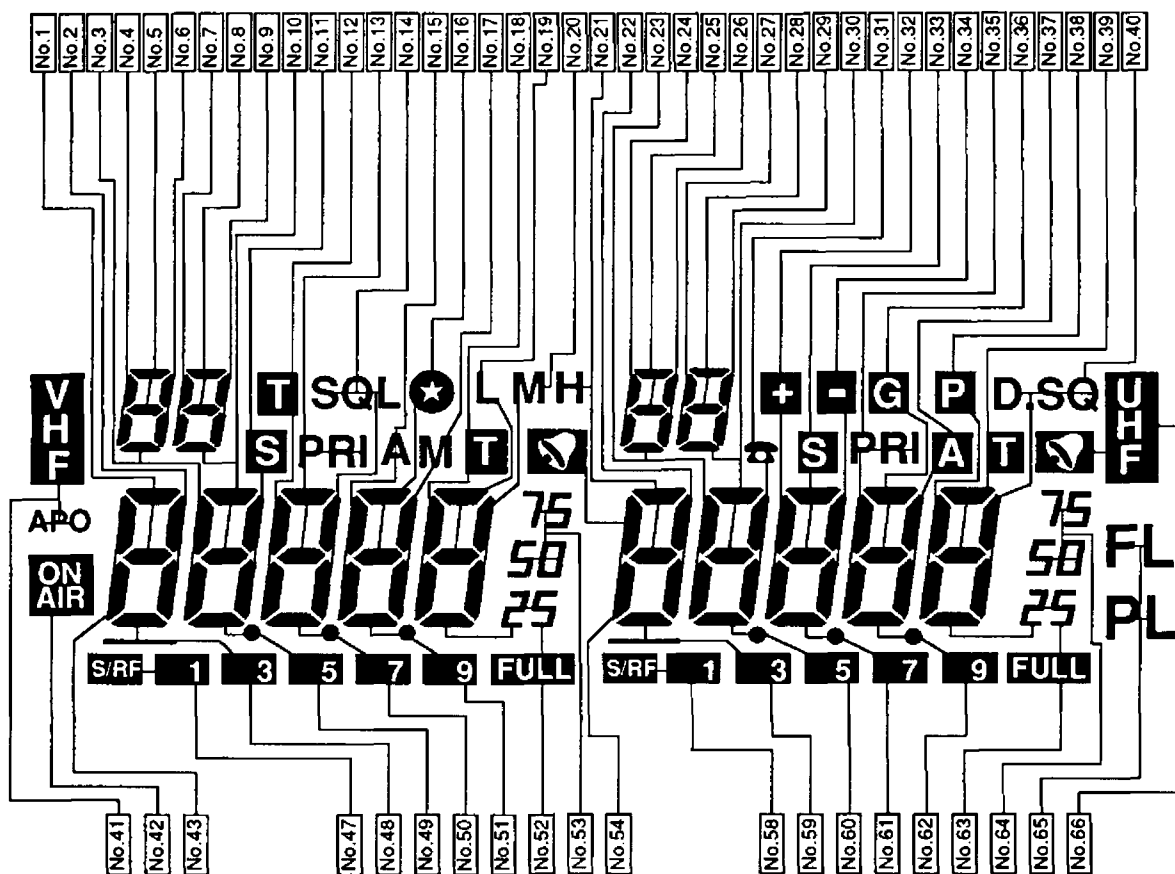


### 13) Transistor, Diode, and LED Outline Drawings

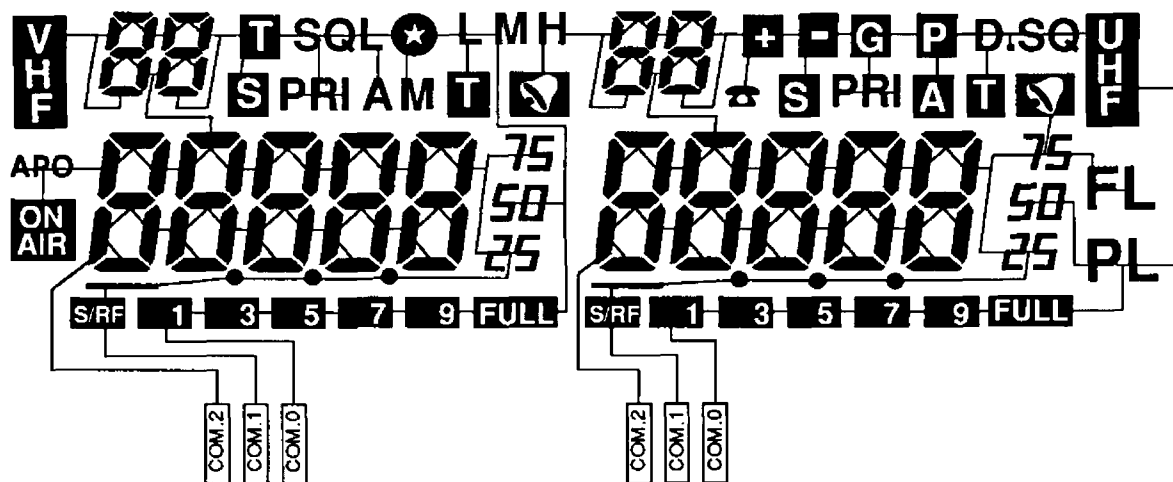
2SA1037 XT0038 	2SA1213 XT0088 	2SC2412 XT0037 	2SC2714 XT0081 	2SC3356 XT0030 	2SC3429 XT0035 	2SC4081 XT0095 	2SC4099 XT0096 
2SC4393 XT0097 	2SK302 XE0015 	2SK508 XE0010 	2SJ144 XE0019 	DTA114YK XU0019 	DTA143XU XU0032 	DTC114YU XU0029 	DTC114YK XU0002 
DTC114EK XU0012 	DTC143TK XU0001 	02CZ4.3Y XD0113 	DA204U XD0130 	DAP202U XD0231 	DAN202U XD0230 	1MN10 XD0091 	MA704WK XD0120 
MA713 XD0128 	MA716 XD0118 	1SS318 XD0129 	1SV214 XD0131 	1SV215 XD0132 	1SV229 XD0133 	MA8027L XD0232 	RLS135 XD0066 
1N5550 XD0110 	SLM-13MWS XL0016 	SLE-0022M XL0025 					
FMA7 XU0027 	FMC2 XU0028 	FMG2 XU0026 	FMS1 XT0070 				
FMW1 XU0020 	TC4S69F XA0137 						

## 14) LCD Connection

### SEGMENT

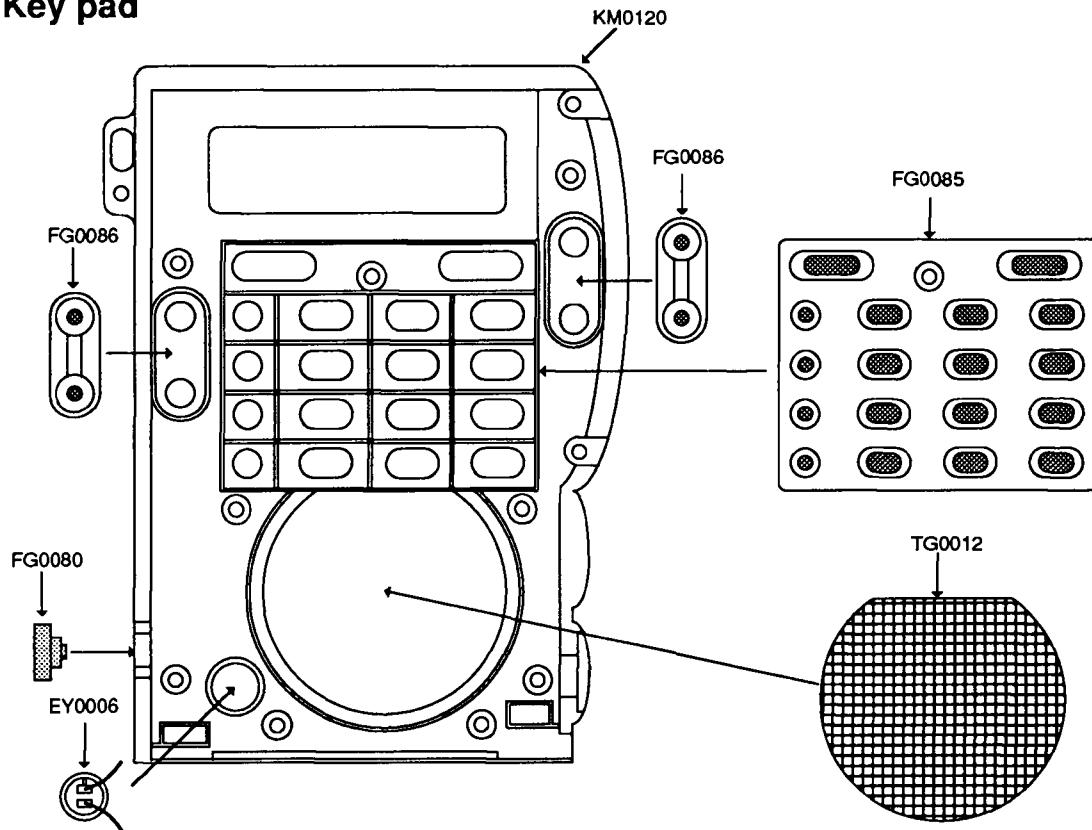


### COMMON

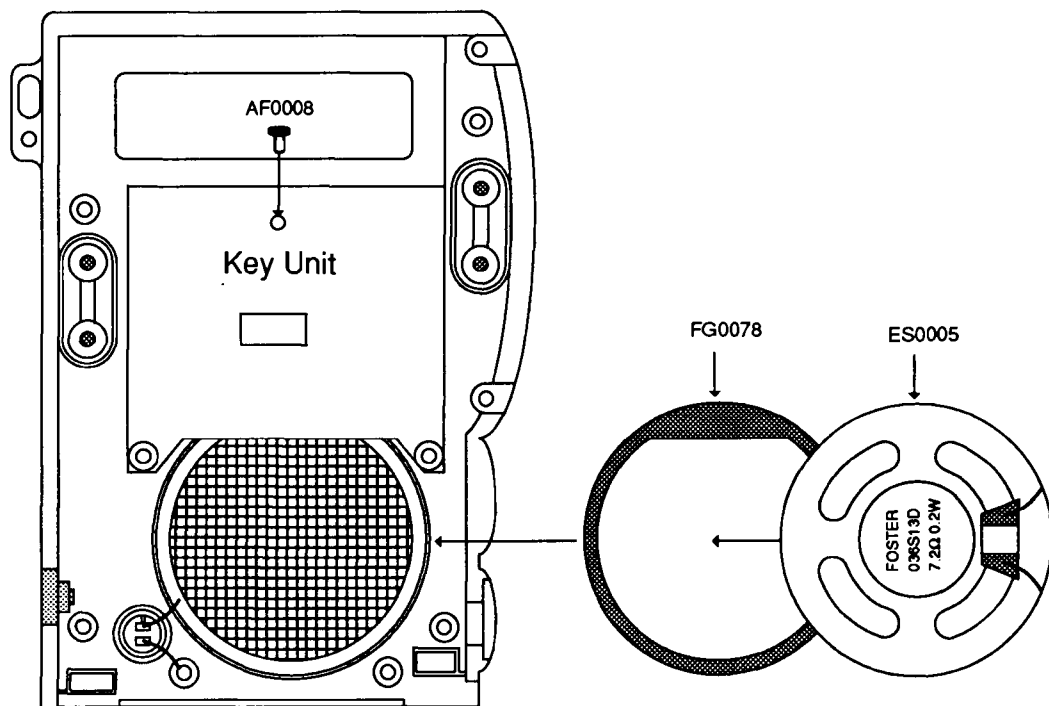


# Exploded View

## 1) Key pad

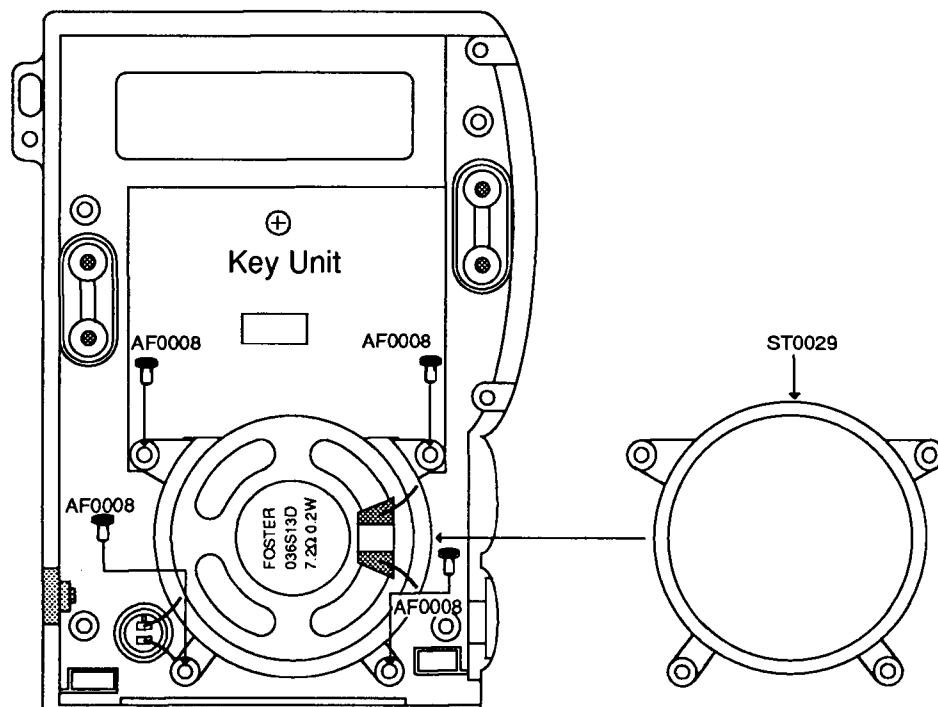


## 2) Speaker

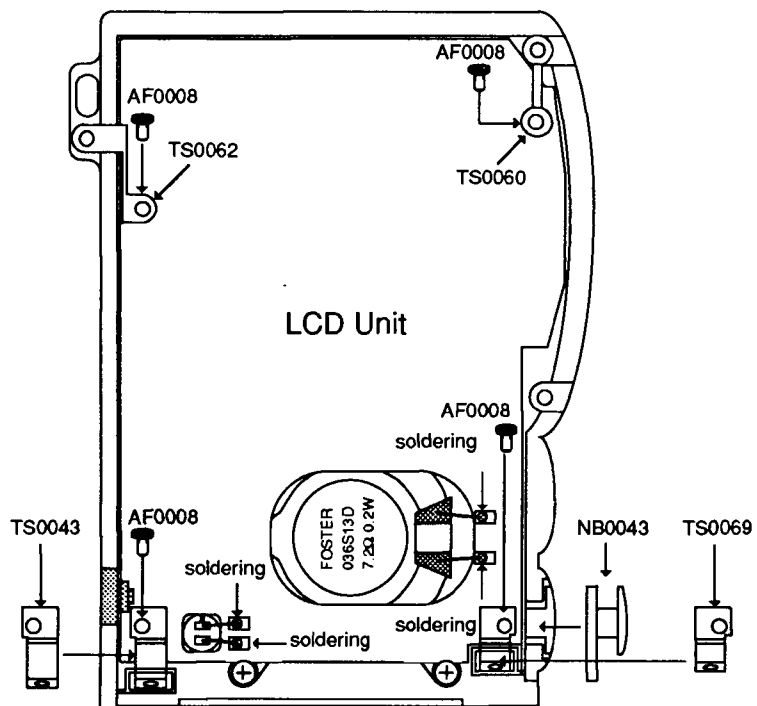




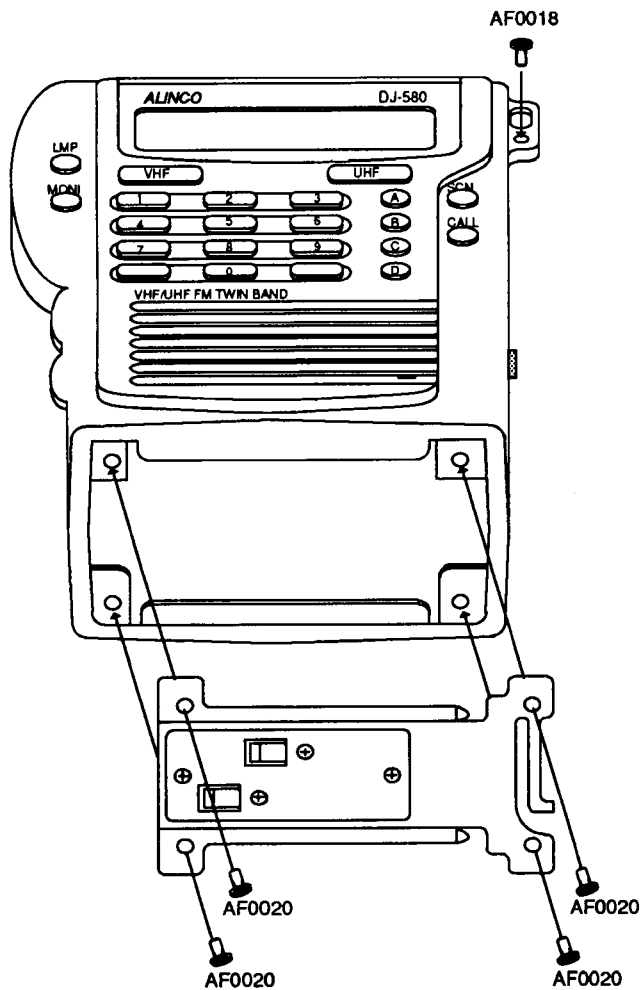
### 3) Key Unit



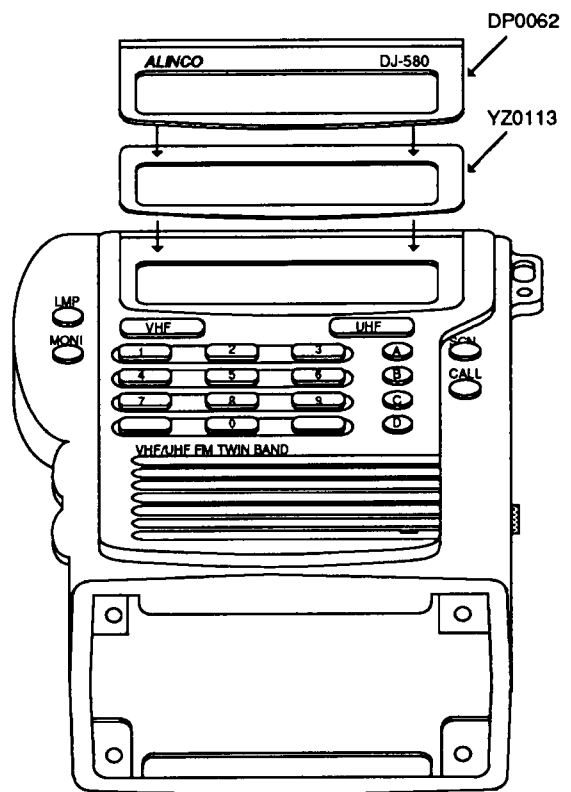
### 4) LCD Unit



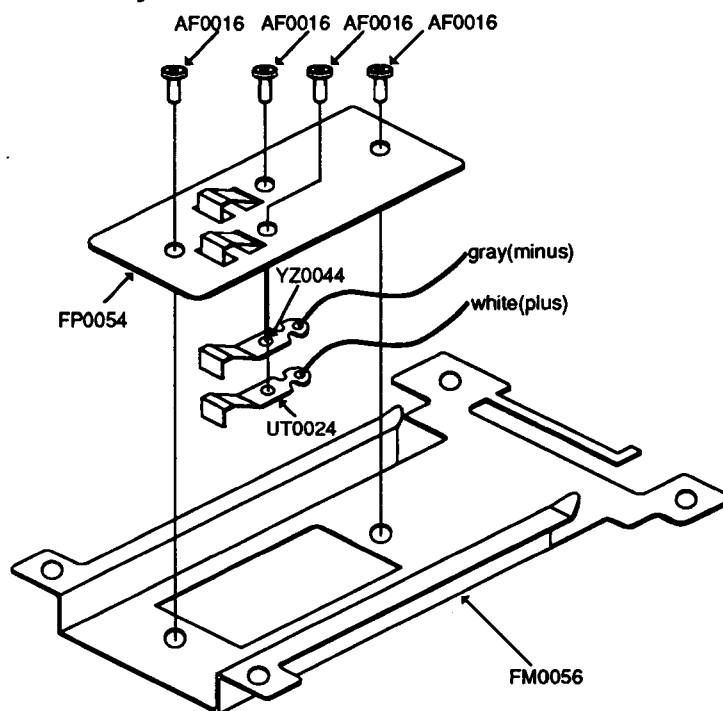
## 5) Battery Terminal



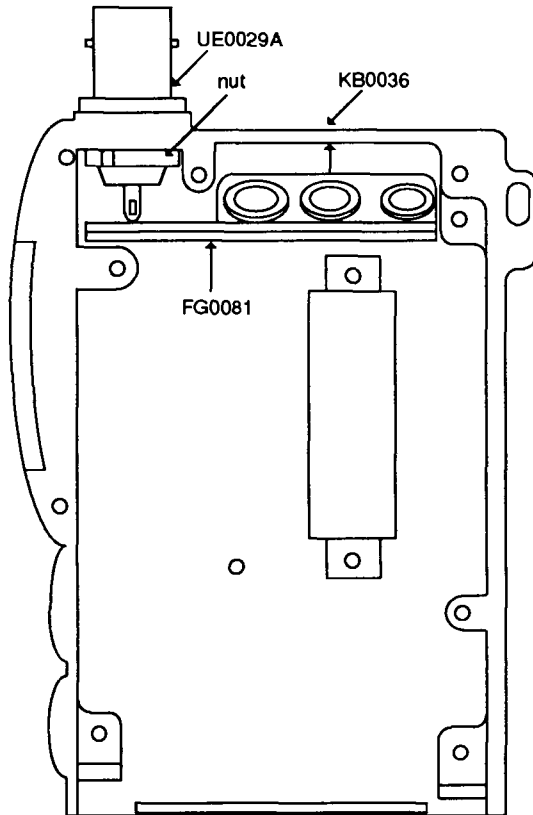
## 6) LCD Panel



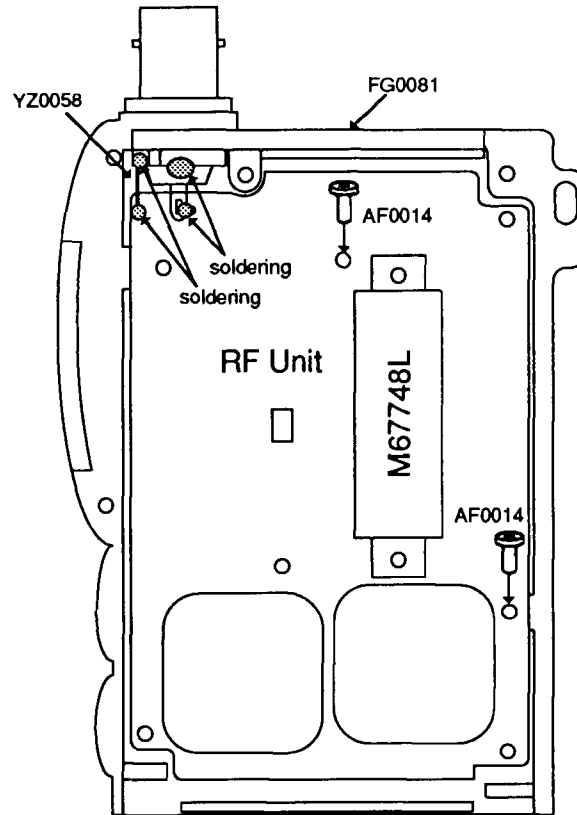
## 7) Battery Terminal Assembly



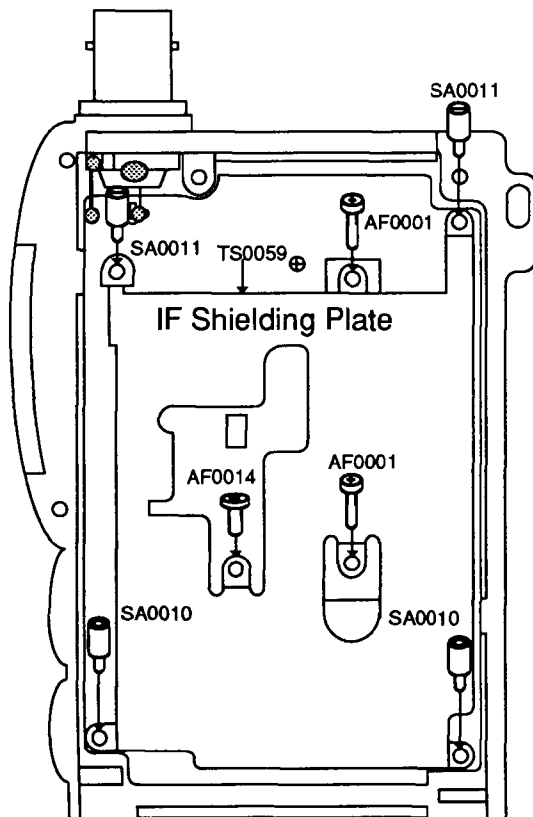
## 8) BNC Receptacle



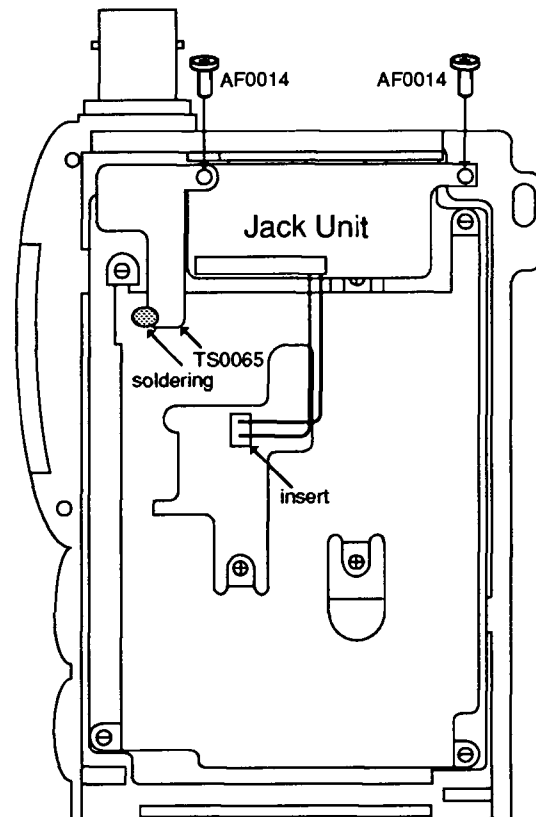
## 9) RF Unit



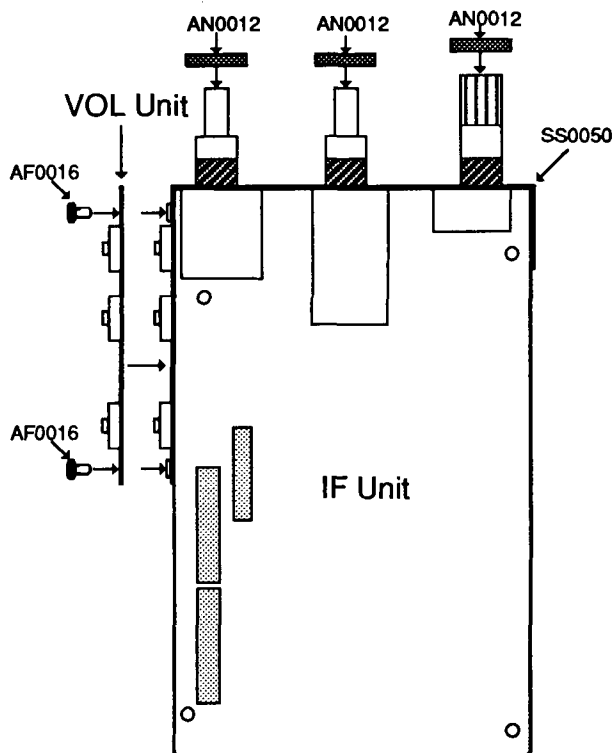
## 10) IF Shielding Plate



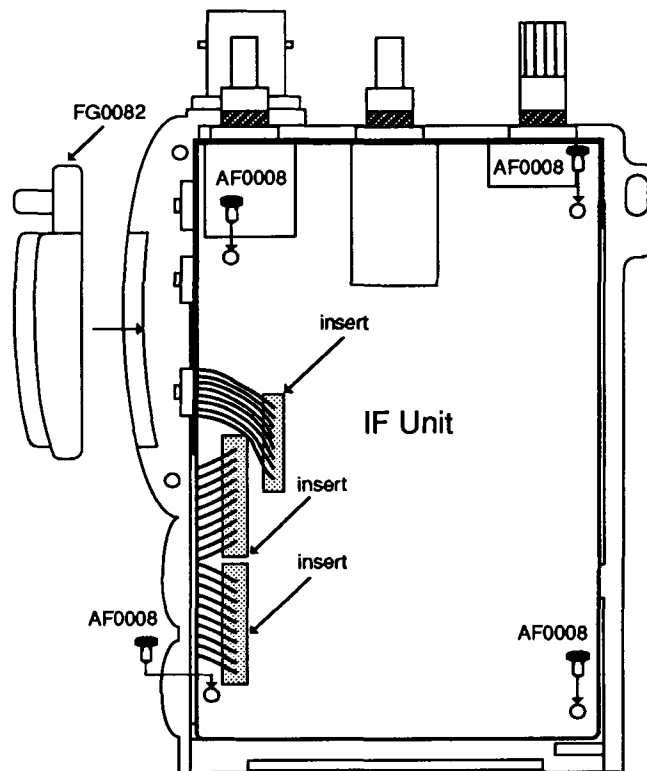
## 11) Jack Unit



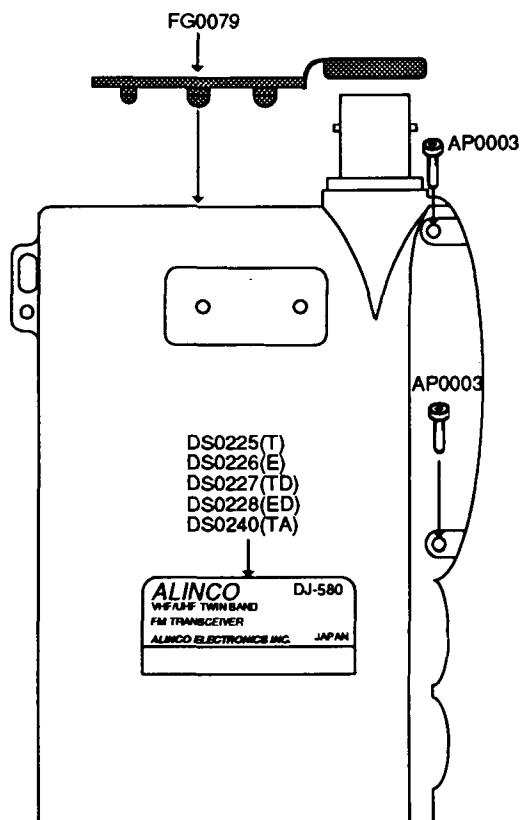
## 12) VOL Unit



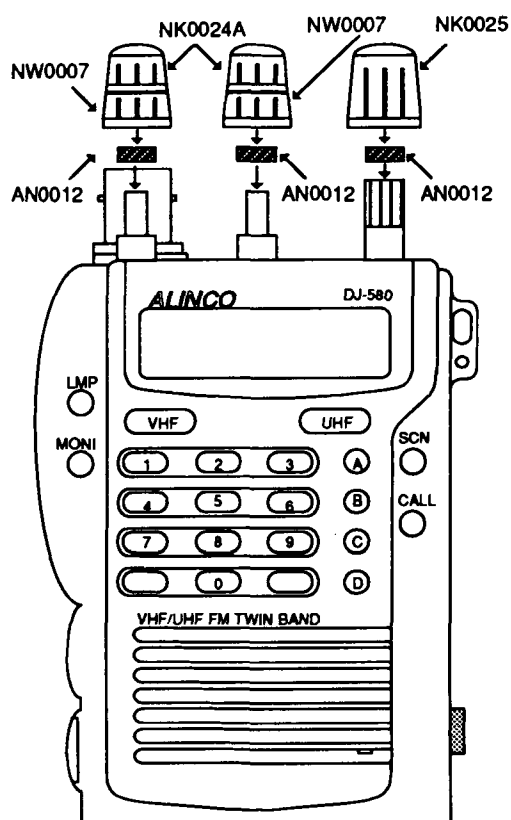
## 13) IF Unit



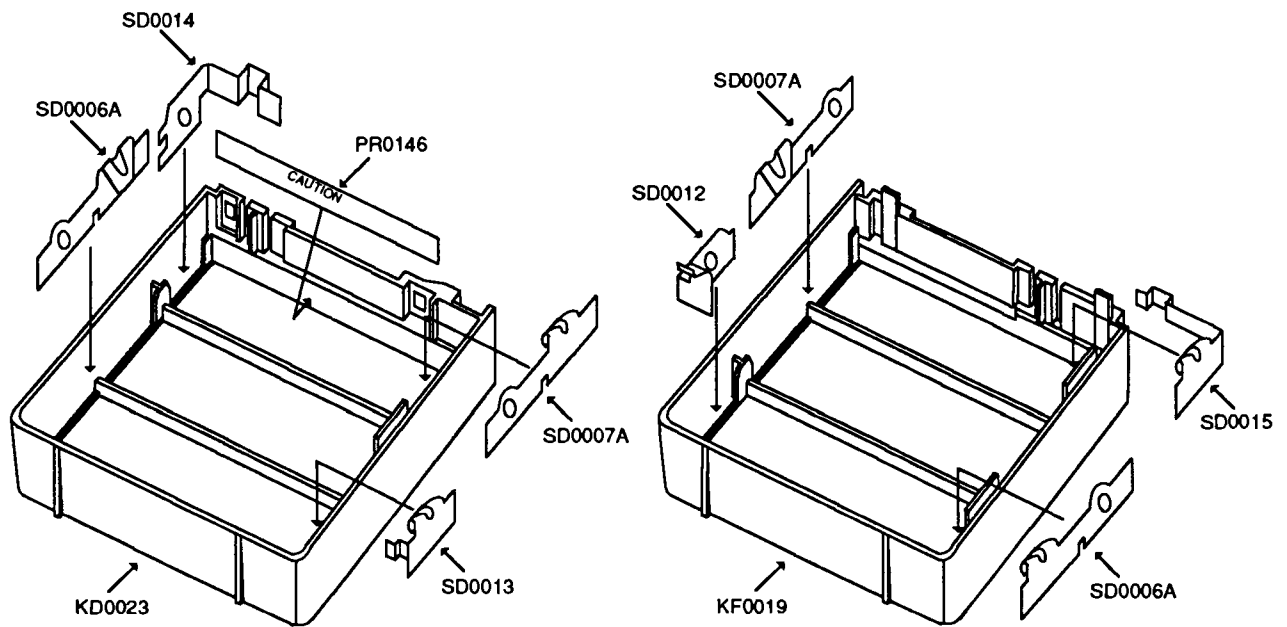
## 14) Name Plate



## 15) Knob

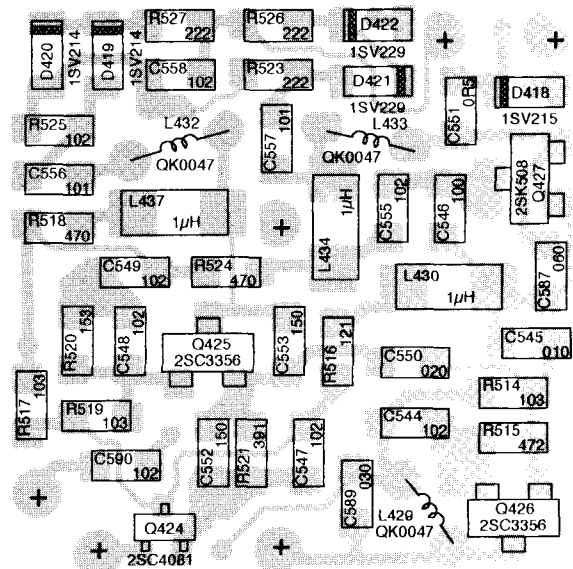


## 16) Battery Case Assembly (TD/ED only)

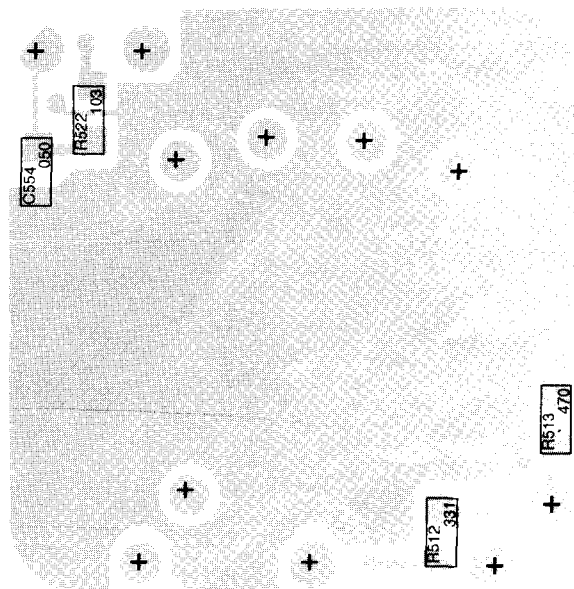


### 1) VCO Unit Side A

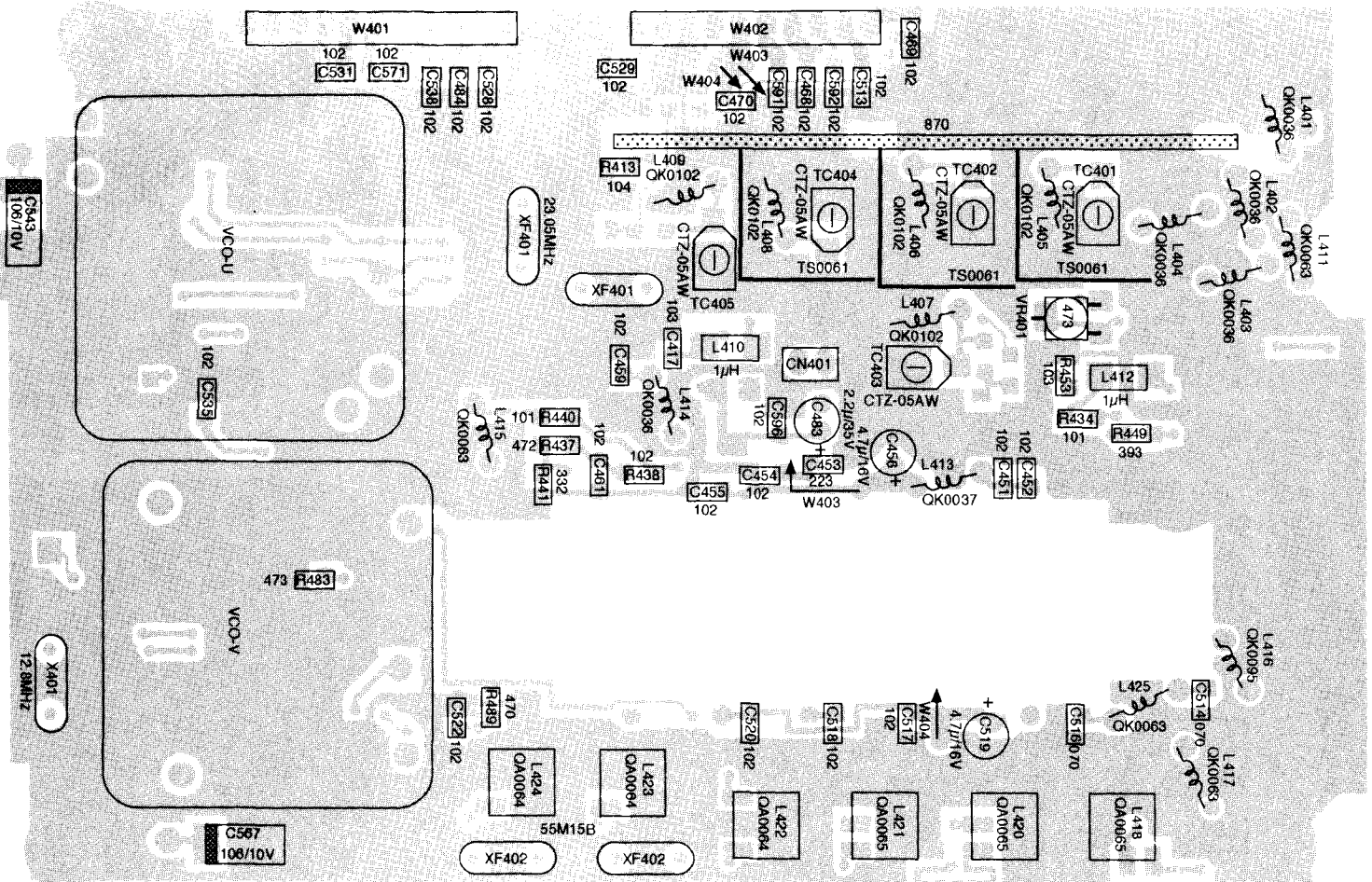
## U-VCO



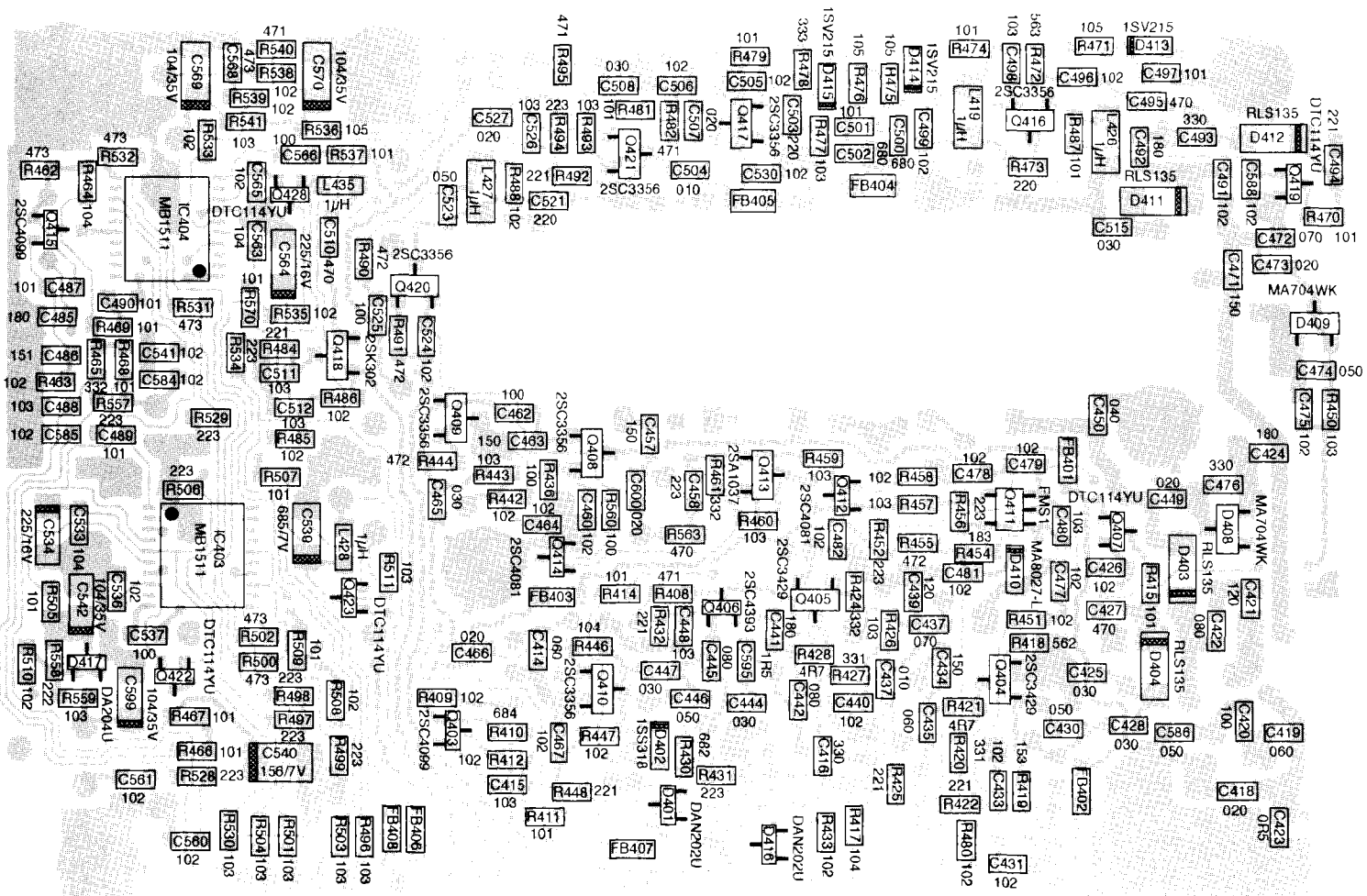
## U-VCO



### 3) RF Unit Side A

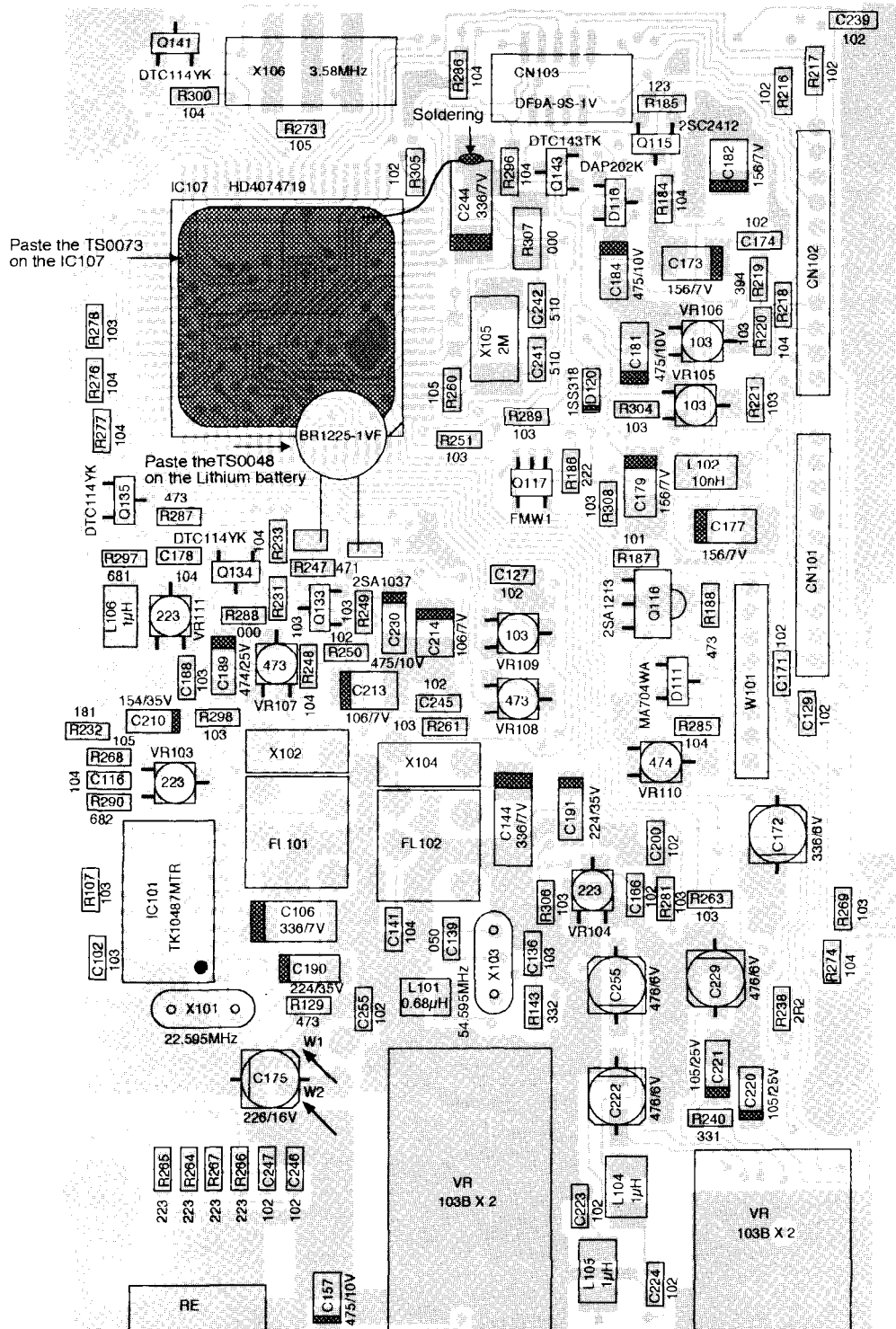


#### 4) RF Unit Side B

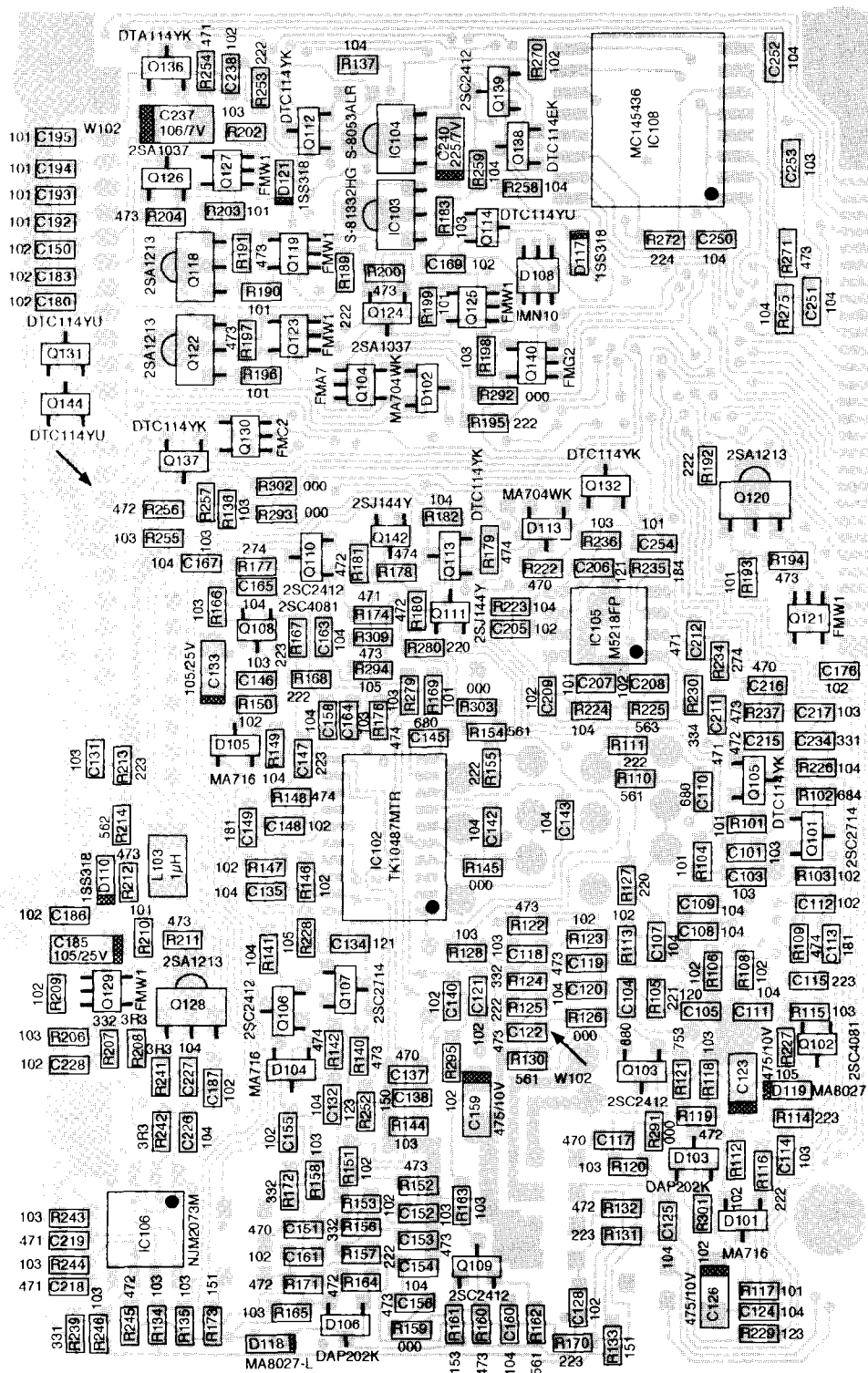




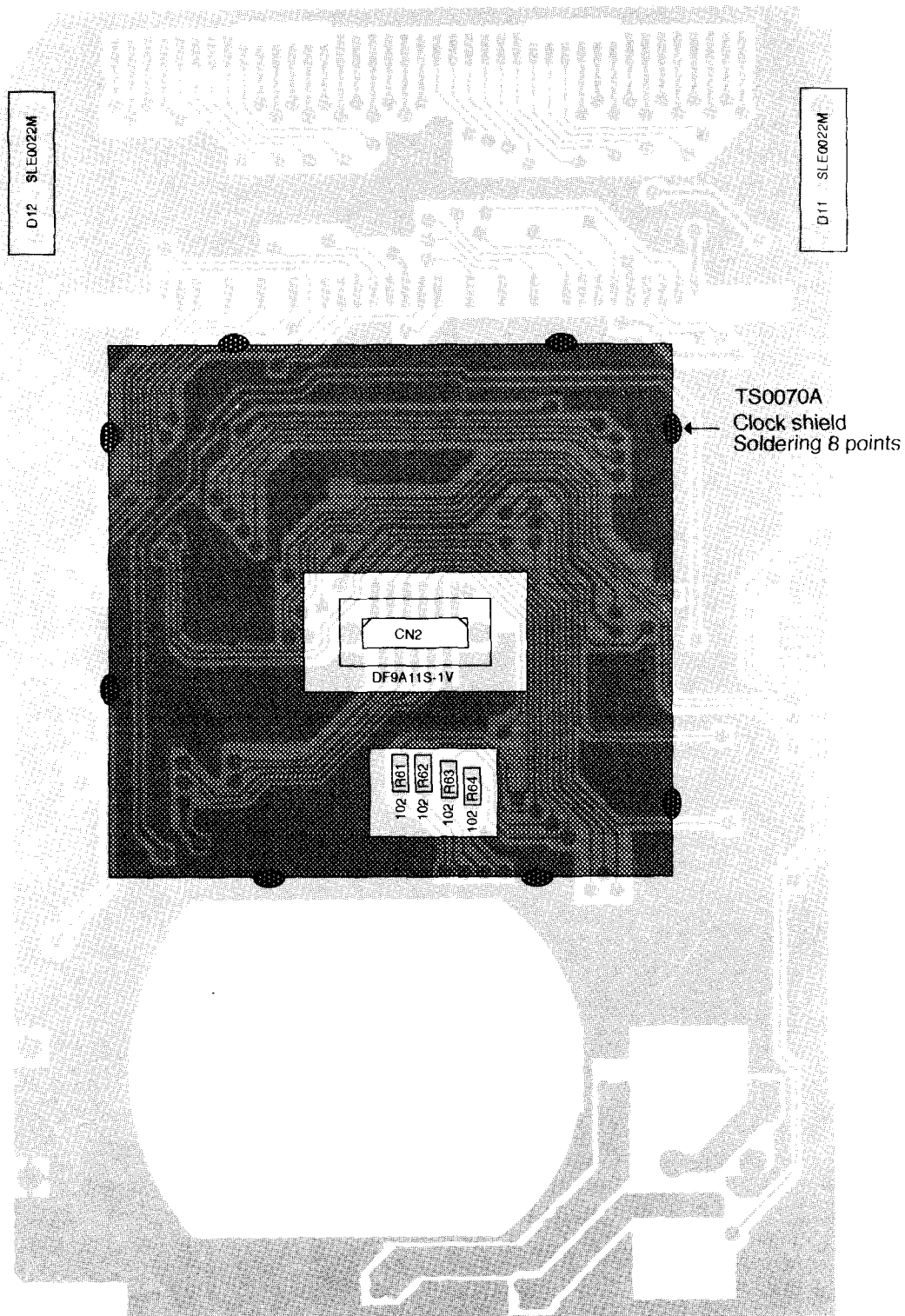
## 5) IF Unit Side A



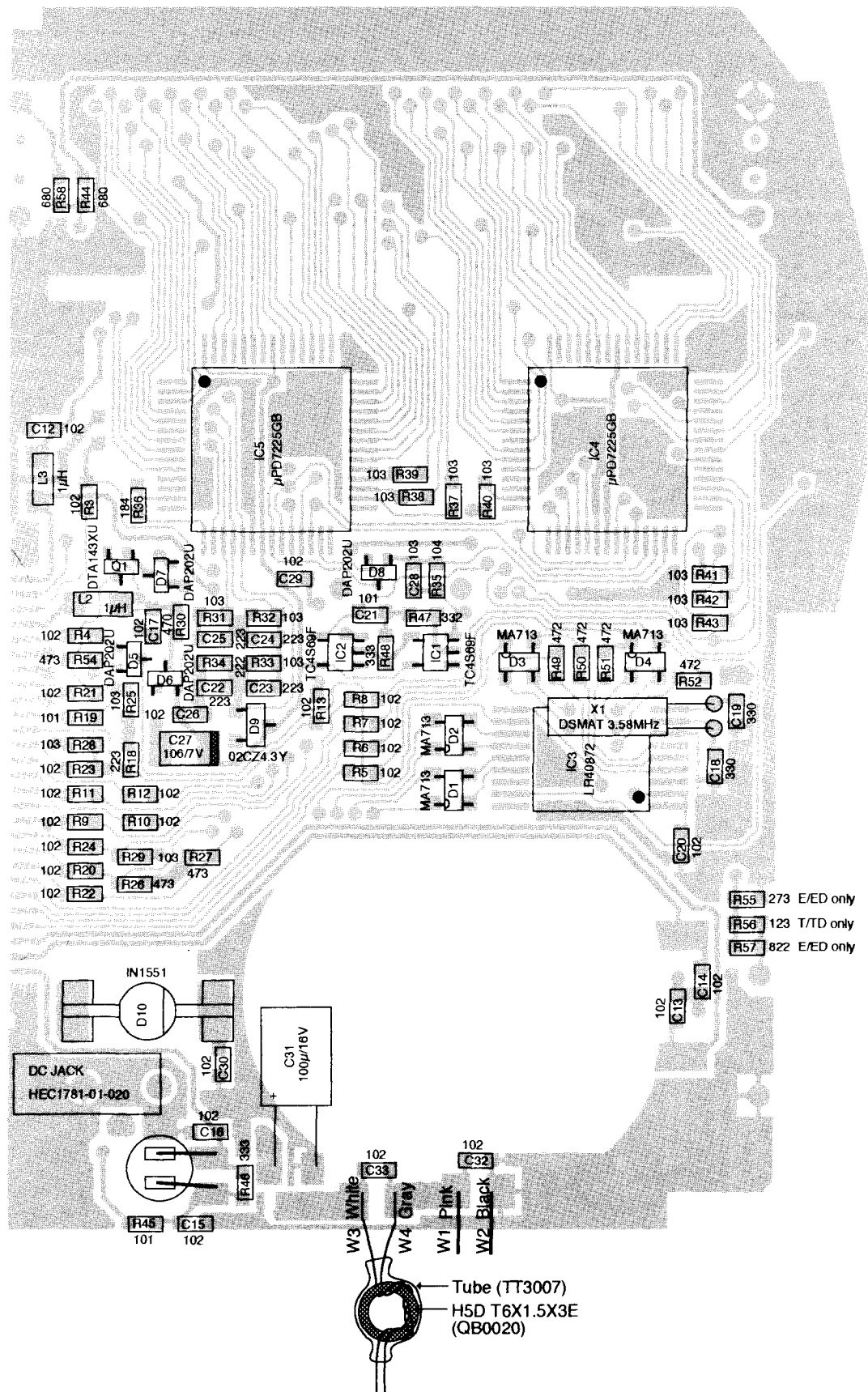
### 6) IF Unit Side B



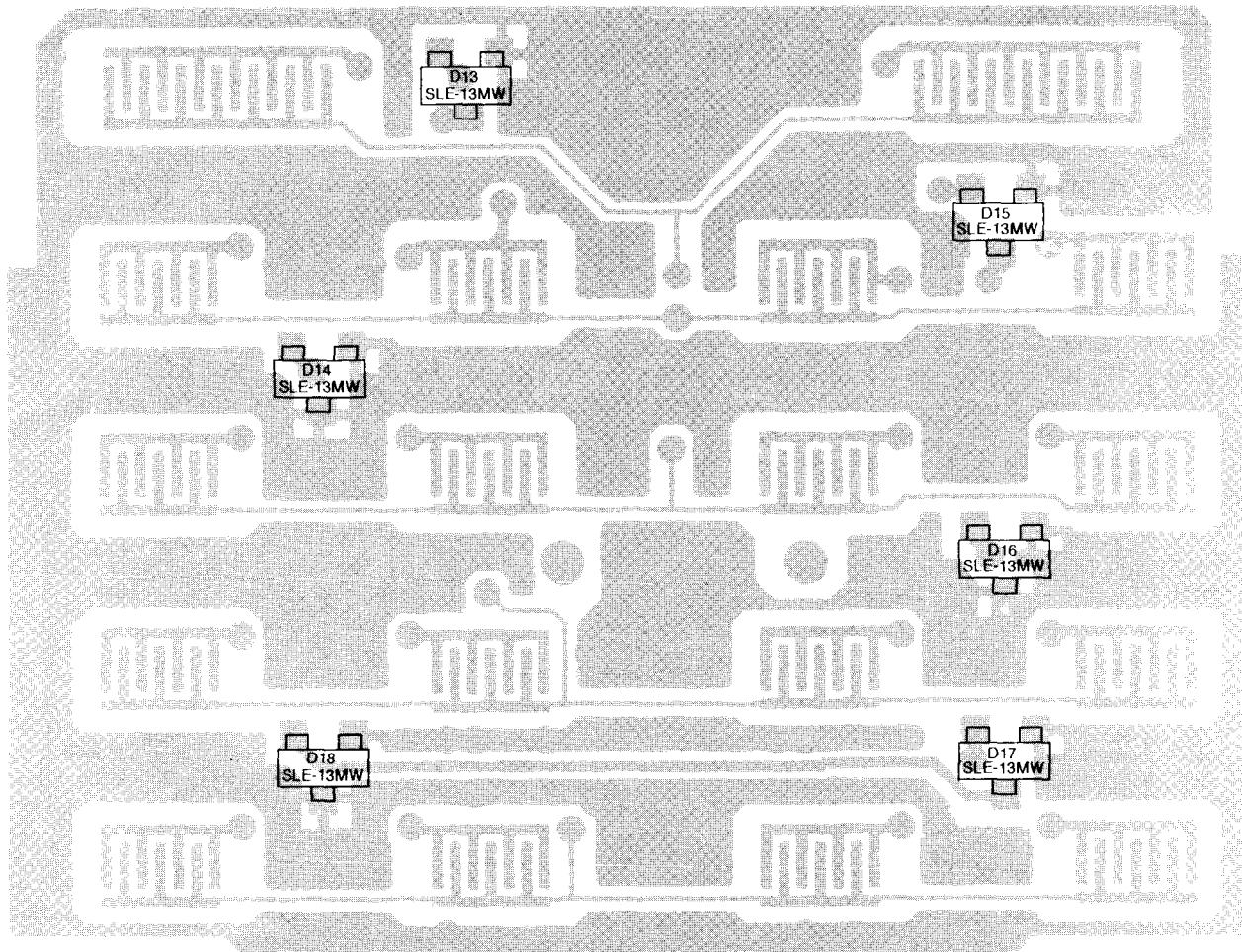
## 7) LCD Unit Side A



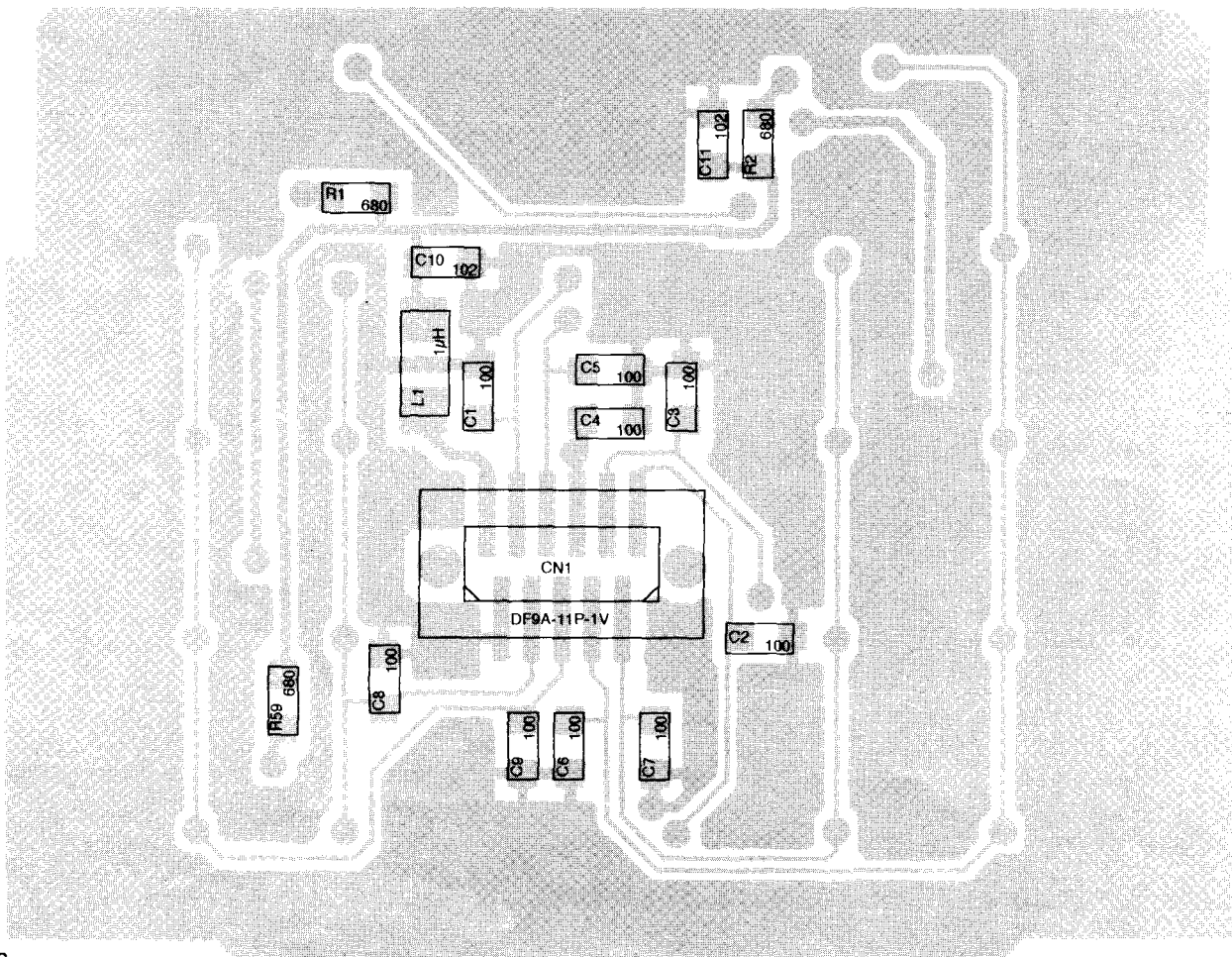
## 8) LCD Unit Side B



## 9) Key Unit Side A



## 10) Key Unit Side B

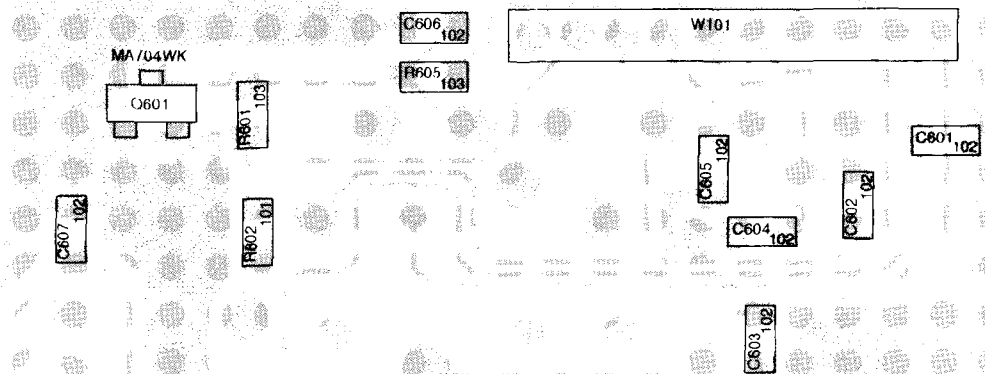




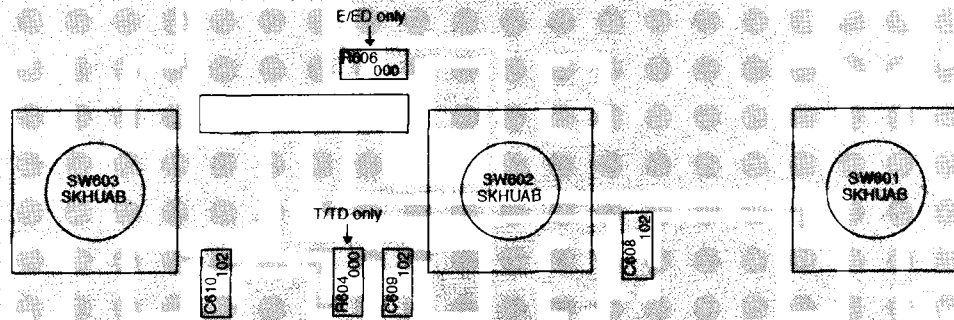
## 11) Jack Unit Side A



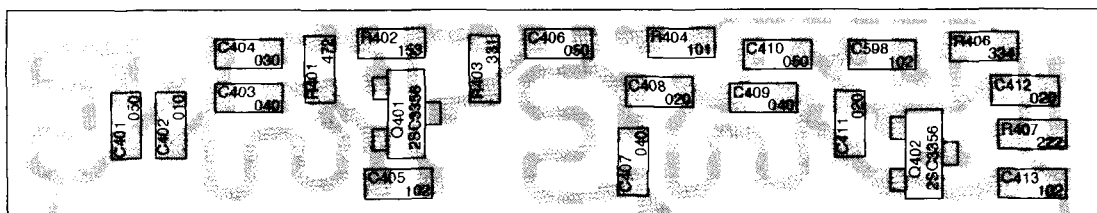
## 12) Jack Unit Side B



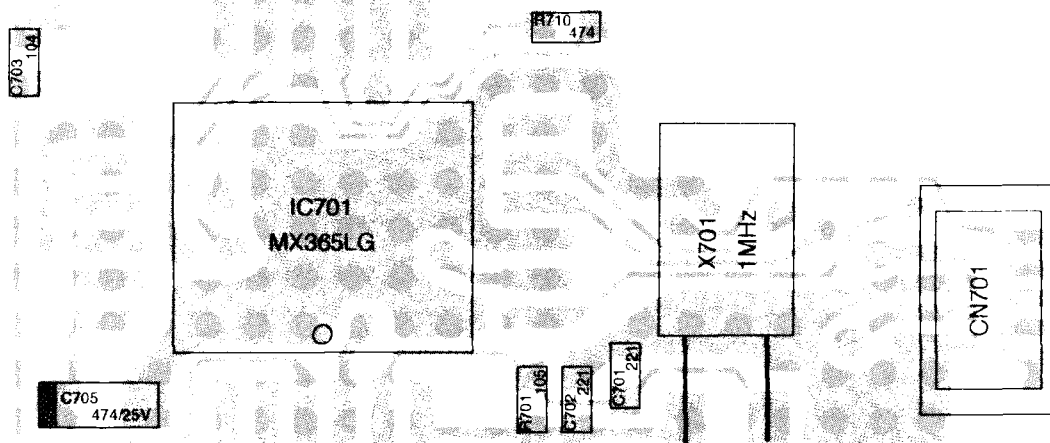
## 13) SW Unit Side B



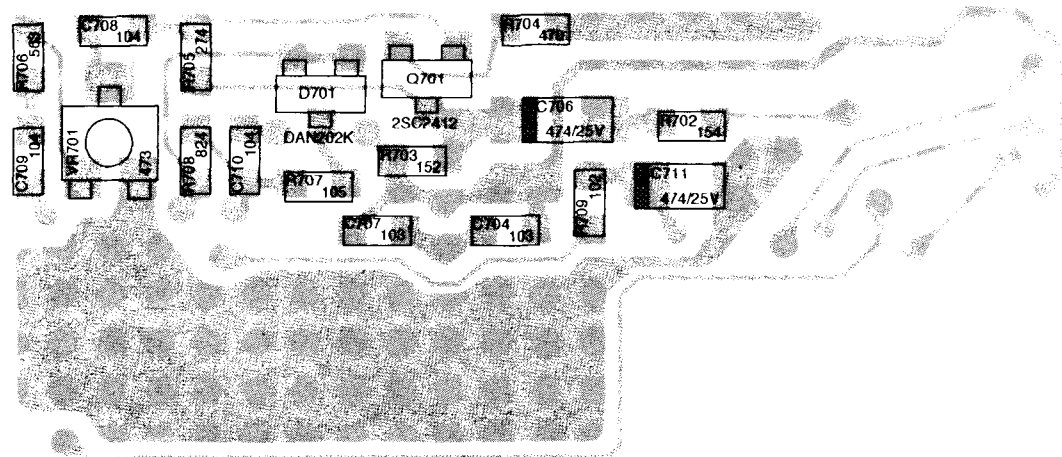
## 14) 870 Unit Side A



## 15) CTCSS Unit Side A



## 16) CTCSS Unit Side B



# DJ-580T/E Parts List

LCD Unit

Ref. No.	Parts No.	Description	Parts Name	Ref. No.	Parts No.	Description	Parts Name
<b>LCD Unit</b>				R39	RK3050	Chip R	MCR03 EZ0J 103
C12	CU3035	Chip C.	CM105 W5R 102K 50VAT	R40	RK3050	Chip R.	MCR03 EZ0J 103
C13	CU3035	Chip C.	CM105 W5R 102K 50VAT	R41	RK3050	Chip R.	MCR03 EZ0J 103
C14	CU3035	Chip C.	CM105 W5R 102K 50VAT	R42	RK3050	Chip R.	MCR03 EZ0J 103
C15	CU3035	Chip C.	CM105 W5R 102K 50VAT	R43	RK3050	Chip R.	MCR03 EZ0J 103
C16	CU3035	Chip C.	CM105 W5R 102K 50VAT	R44	RK3024	Chip R.	MCR03 EZ0J 680
C17	CU3035	Chip C.	CM105 W5R 102K 50VAT	R45	RK3026	Chip R.	MCR03 EZ0J 101
C18	CU3017	Chip C.	CM105 CH 330K 50VAT	R46	RK3056	Chip R.	MCR03 EZ0J 333
C19	CU3017	Chip C.	CM105 CH 330K 50VAT	R47	RK3044	Chip R.	MCR03 EZ0J 332
C20	CU3035	Chip C.	CM105 W5R 102K 50VAT	R48	RK3056	Chip R.	MCR03 EZ0J 333
C21	CU3023	Chip C.	CM105 CH 101K 50VAT	R49	RK3046	Chip R.	MCR03 EZ0J 472
C22	CU3054	Chip C.	CM105 W5R 223K 25VAT	R50	RK3046	Chip R.	MCR03 EZ0J 472
C23	CU3054	Chip C.	CM105 W5R 223K 25VAT	R51	RK3046	Chip R.	MCR03 EZ0J 472
C24	CU3054	Chip C.	CM105 W5R 223K 25VAT	R52	RK3046	Chip R.	MCR03 EZ0J 472
C25	CU3054	Chip C.	CM105 W5R 223K 25VAT	R54	RK3058	Chip R.	MCR03 EZ0J 473
C26	CU3035	Chip C.	CM105 W5R 102K 50VAT	R55	RK3055	Chip R.	MCR03 EZ0J 273(E/ED)
C27	CS0209	Chip Tantal	TMC-M0J 106 MTR	R56	RK3051	Chip R.	MCR03 EZ0J 123(T/TD)
C28	CU3052	Chip C.	CM105 W5R 103K 25VAT	R57	RK3049	Chip R.	MCR03 EZ0J 822(E/ED)
C29	CU3035	Chip C.	CM105 W5R 102K 50VAT	R58	RK3024	Chip R.	MCR03 EZ0J 680
C30	CU3035	Chip C.	CM105 W5R 102K 50VAT	R61	RK3038	Chip R.	MCR03 EZ0J 102
C31	CE0056	Electrolytic C.	16MV 100 SW	R62	RK3038	Chip R.	MCR03 EZ0J 102
C32	CU3035	Chip C.	CM105 W5R 102K 50VAT	R63	RK3038	Chip R.	MCR03 EZ0J 102
C33	CU3035	Chip C.	CM105 W5R 102K 50VAT	R64	RK3038	Chip R.	MCR03 EZ0J 102
CN2	UE0130	Connector	DF9A11S-1V	L2	QC0003	Chip L.	MLF3216A 1R0M
R3	RK3038	Chip R.	MCR03 EZ0J 102	L3	QC0003	Chip L.	MLF3216A 1R0M
R4	RK3038	Chip R.	MCR03 EZ0J 102	IC1	XA0137	IC	TC4S69F
R5	RK3038	Chip R.	MCR03 EZ0J 102	IC2	XA0137	IC	TC4S69F
R6	RK3038	Chip R.	MCR03 EZ0J 102	IC3	XA0042	IC	LR40872
R7	RK3038	Chip R.	MCR03 EZ0J 102	IC4	XA0141	IC	μPD7225GB-3B7
R8	RK3038	Chip R.	MCR03 EZ0J 102	IC5	XA0141	IC	μPD7225GB-3B7
R9	RK3038	Chip R.	MCR03 EZ0J 102	X1	XQ0045	Crystal	DSMAT 3.58 MHz 18P
R10	RK3038	Chip R.	MCR03 EZ0J 102	D1	XD0128	Diode	MA713TX
R11	RK3038	Chip R.	MCR03 EZ0J 102	D2	XD0128	Diode	MA713TX
R12	RK3038	Chip R.	MCR03 EZ0J 102	D3	XD0128	Diode	MA713TX
R13	RK3038	Chip R.	MCR03 EZ0J 102	D4	XD0128	Diode	MA713TX
R18	RK3054	Chip R.	MCR03 EZ0J 223	D5	XD0231	Diode	DAP202U T106
R19	RK3026	Chip R.	MCR03 EZ0J 101	D6	XD0231	Diode	DAP202U T106
R20	RK3038	Chip R.	MCR03 EZ0J 102	D7	XD0231	Diode	DAP202U T106
R21	RK3038	Chip R.	MCR03 EZ0J 102	D8	XD0231	Diode	DAP202U T106
R22	RK3038	Chip R.	MCR03 EZ0J 102	D9	XD0113	Diode	02CZ4.3YTE85L
R23	RK3038	Chip R.	MCR03 EZ0J 102	D10	XD0110	Diode	1N5551
R24	RK3038	Chip R.	MCR03 EZ0J 102	D11	XL0025	LED	SLE0022M
R25	RK3050	Chip R.	MCR03 EZ0J 103	D12	XL0025	LED	SLE0022M
R26	RK3058	Chip R.	MCR03 EZ0J 473	Q1	XU0032	Transistor	DTA143XU T106
R27	RK3058	Chip R.	MCR03 EZ0J 473	FB1	QB0020	Toroidal Core	H5D T6X1.5X3E
R28	RK3050	Chip R.	MCR03 EZ0J 103				
R29	RK3050	Chip R.	MCR03 EZ0J 103				
R30	RK3022	Chip R.	MCR03 EZ0J 470				
R31	RK3050	Chip R.	MCR03 EZ0J 103				
R32	RK3050	Chip R.	MCR03 EZ0J 103				
R33	RK3050	Chip R.	MCR03 EZ0J 103				
R34	RK3042	Chip R.	MCR03 EZ0J 222				
R35	RK3062	Chip R.	MCR03 EZ0J 104				
R36	RK3065	Chip R.	MCR03 EZ0J 184				
R37	RK3050	Chip R.	MCR03 EZ0J 103				
R38	RK3050	Chip R.	MCR03 EZ0J 103				



## LCD Unit / Key Unit

Ref. No.	Parts No.	Description	Parts Name	Ref. No.	Parts No.	Description	Parts Name
W1	MPDJ11AA	Wire	#26P 02-110-02	Key Unit			
W2	MBDJ11AA	Wire	#26B 2-11-2	D13	XL0016	LED	SLM-13MW T96B
W3	MWDK06AA	Wire	#28W 02-060-02	D14	XL0016	LED	SLM-13MW T96B
W4	MNDK06AA	Wire	#28N 02-060-02	D15	XL0016	LED	SLM-13MW T96B
W5	MADJH4AA	Wire	#26A 2-045-2	D16	XL0016	LED	SLM-13MW T96B
W6	MKCL02AA	Wire	#30K 02-020-02	D17	XL0016	LED	SLM-13MW T96B
W7	MBCL02AA	Wire	#30B 02-020-02	D18	XL0016	LED	SLM-13MW T96B
W8	MBCL02AA	Wire	#30B 02-020-02	C1	CU3011	Chip C.	CM105 CH 100D 50VAT
W9	MBCL02AA	Wire	#30B 02-020-02	C2	CU3011	Chip C.	CM105 CH 100D 50VAT
	UJ0015	DC Jack	HEC 781-01-020	C3	CU3011	Chip C.	CM105 CH 100D 50VAT
	ES0005	Speaker	036S13D	C4	CU3011	Chip C.	CM105 CH 100D 50VAT
	EY0006	Microphone	WM-60AT	C5	CU3011	Chip C.	CM105 CH 100D 50VAT
	EL0016	LCD	DJ-F5 LCD	C6	CU3011	Chip C.	CM105 CH 100D 50VAT
	UP0216B	PCB	LCD Unit B	C7	CU3011	Chip C.	CM105 CH 100D 50VAT
	TS0064	Shield Tape	LCD Shield	C8	CU3011	Chip C.	CM105 CH 100D 50VAT
	TS0070A	Shield Tape	CLOCK Shield	C9	CU3011	Chip C.	CM105 CH 100D 50VAT
	TT1008	Tube	F2 AWG20	C10	CU3035	Chip C.	CM105 W5R 102K 50VAT
	YZ0042	Adhesion		C11	CU3035	Chip C.	CM105 W5R 102K 50VAT
	ST0030		LCD Flame	R1	RK3024	Chip R.	MCR03 EZ0J 680
	TT3004	Tube	8.0 x 1.0 mm	R2	RK3024	Chip R.	MCR03 EZ0J 680
	FG0087		LCD Connector	R59	RK3024	Chip R.	MCR03 EZ0J 680
	DH0007		Lighting Plate	L1	QC0003	Chip L.	MLF3216 A 1R0 M
	TT3007	Tube	6.0	CN1	UE0133	Connector	DF9A-11P-1V
					up0216B	PCB	LCD AND PCB 2 3 4 5

Ref. No.	Parts No.	Description	Parts Name	Ref. No.	Parts No.	Description	Parts Name
VCO-V Unit				VCO-U Unit			
C572	CU3002	Chip C.	CM105 CH 010C 50VAT	C544	CU3035	Chip C.	CM105 W5R 102K 50VAT
C573	CU3052	Chip C.	CM105 W5R 103K 25VAT	C545	CU3002	Chip C.	CM105 CH 010C 50VAT
C574	CU3006	Chip C.	CM105 CH 050C 50VAT	C546	CU3011	Chip C.	CM105 CH 100D 50VAT
C575	CU3035	Chip C.	CM105 W5R 102K 50VAT	C547	CU3035	Chip C.	CM105 W5R 102K 50VAT
C576	CU3052	Chip C.	CM105 W5R 103K 25VAT	C548	CU3035	Chip C.	CM105 W5R 102K 50VAT
C577	CU3052	Chip C.	CM105 W5R 103K 25VAT	C549	CU3035	Chip C.	CM105 W5R 102K 50VAT
C578	CU3052	Chip C.	CM105 W5R 103K 25VAT	C550	CU3003	Chip C.	CM105 CH 020C 50VAT
C579	CU3035	Chip C.	CM105 W5R 102K 50VAT	C551	CU3001	Chip C.	CM105 CH 0R5C 50VAT
C580	CU3002	Chip C.	CM105 CH 010C 50VAT	C552	CU3013	Chip C.	CM105 CH 150K 50VAT
C581	CU3035	Chip C.	CM105 W5R 102K 50VAT	C553	CU3013	Chip C.	CM105 CH 150K 50VAT
C582	CU3035	Chip C.	CM105 W5R 102K 50VAT	C554	CU3035	Chip C.	CM105 W5R 102K 50VAT
C583	CU3059	Chip C.	CM105 Y5V 104Z 25VAT	C555	CU3035	Chip C.	CM105 W5R 102K 50VAT
C597	CS0236	Chip Tantal	TMC-M0J685MTR	C556	CU3023	Chip C.	CM105 CH 101K 50VAT
R542	RK3026	Chip R.	MCR03 EZ0J 101	C557	CU3023	Chip C.	CM105 CH 101K 50VAT
R543	RK3030	Chip R.	MCR03 EZ0J 221	C558	CU3035	Chip C.	CM105 W5R 102K 50VAT
R544	RK3050	Chip R.	MCR03 EZ0J 103	C587	CU3007	Chip C.	CM105 CH 060C 50VAT
R545	RK3054	Chip R.	MCR03 EZ0J 223	C589	CU3004	Chip C.	CM105 CH 030C 50VAT
R546	RK3034	Chip R.	MCR03 EZ0J 471	C590	CU3035	Chip C.	CM105 W5R 102K 50VAT
R547	RK3022	Chip R.	MCR03 EZ0J 470	R512	RK3032	Chip R.	MCR03 EZ0J 331
R548	RK3050	Chip R.	MCR03 EZ0J 103	R513	RK3022	Chip R.	MCR03 EZ0J 470
R549	RK3046	Chip R.	MCR03 EZ0J 472	R514	RK3050	Chip R.	MCR03 EZ0J 103
R550	RK3026	Chip R.	MCR03 EZ0J 101	R515	RK3046	Chip R.	MCR03 EZ0J 472
R551	RK3038	Chip R.	MCR03 EZ0J 102	R516	RK3027	Chip R.	MCR03 EZ0J 121
R552	RK3062	Chip R.	MCR03 EZ0J 104	R517	RK3050	Chip R.	MCR03 EZ0J 103
R553	RK3062	Chip R.	MCR03 EZ0J 104	R518	RK3022	Chip R.	MCR03 EZ0J 470
R554	RK3062	Chip R.	MCR03 EZ0J 104	R519	RK3050	Chip R.	MCR03 EZ0J 103
R555	RK3050	Chip R.	MCR03 EZ0J 103	R520	RK3052	Chip R.	MCR03 EZ0J 153
R556	RK3038	Chip R.	MCR03 EZ0J 102	R521	RK3033	Chip R.	MCR03 EZ0J 391
L436	QC0010	Chip L.	MLF3216E 100M	R522	RK3050	Chip R.	MCR03 EZ0J 103
L437	QC0110	Chip L.	LER015T4R7K	R523	RK3042	Chip R.	MCR03 EZ0J 222
L438	QC0003	Chip L.	MLF3216A 1R0M	R524	RK3022	Chip R.	MCR03 EZ0J 470
L439	QC0010	Chip L.	MLF3216E 100M	R525	RK3038	Chip R.	MCR03 EZ0J 102
L440	QK0081	Coil	0.4-1.5 x 4T	R526	RK3042	Chip R.	MCR03 EZ0J 222
L441	QA0063	Coil	VCO Coil -T QA63	R527	RK3042	Chip R.	MCR03 EZ0J 222
D423	XD0132	Diode	1SV215 TPH4	L429	QK0047	Coil	0.5-2.2 x 3.5T
D424	XD0132	Diode	1SV215 TPH4	L430	QC0003	Chip L.	MLF3216A 1R0M
D425	XD0132	Diode	1SV215 TPH4	L431	QC0003	Chip L.	MLF3216A 1R0M
Q429	XT0030	Transistor	2SC3356 T1BR25	L432	QK0047	Coil	0.5-2.2 x 3.5T
Q430	XT0030	Transistor	2SC3356 T1BR25	L433	QK0047	Coil	0.5-2.2 x 3.5T
Q431	XT0095	Transistor	2SC4081 T106R	L434	QC0003	Chip L.	MLF3216A 1R0M
	UT0019	Terminal	CK-1-2	D418	XD0132	Diode	1SV215 TPH4
	TS0055	Case	VCO Case	D419	XD0131	Diode	1SV214 TPH4
				D420	XD0131	Diode	1SV214 TPH4
				D421	XD0133	Diode	1SV229 TPH3
				D422	XD0133	Diode	1SV229 TPH3
				Q424	XT0095	Transistor	2SC4081 T106R
				Q425	XT0030	Transistor	2SC3356 T1BR25
				Q426	XT0030	Transistor	2SC3356 T1BR25
				Q427	XE0010	FET	2SK508K52T2
					UT0019	Terminal	CK-1-2
					TS0055	Case	VCO Case

## RF Unit

Ref. No.	Parts No.	Description	Parts Name
RF Unit			
C414	CU3007	Chip C.	CM105 CH 060C 50VAT
C415	CU3052	Chip C.	CM105 W5R 103K 25VAT
C416	CU3017	Chip C.	CM105 CH 330K 50VAT
C417	CU3052	Chip C.	CM105 W5R 103K 25VAT
C418	CU3003	Chip C.	CM105 CH 020C 50VAT
C419	CU3007	Chip C.	CM105 CH 060C 50VAT
C420	CU3011	Chip C.	CM105 CH 100D 50VAT
C421	CU3012	Chip C.	CM105 CH 120K 50VAT
C422	CU3009	Chip C.	CM105 CH 080C 50VAT
C423	CU3001	Chip C.	CM105 CH 0R5C 50VAT
C424	CU3014	Chip C.	CM105 CH 180K 50VAT
C425	CU3004	Chip C.	CM105 CH 030C 50VAT
C426	CU3035	Chip C.	CM105 W5R 102K 50VAT
C427	CU3019	Chip C.	CM105 CH 470K 50VAT
C428	CU3004	Chip C.	CM105 CH 030C 50VAT
C430	CU3006	Chip C.	CM105 CH 050C 50VAT
C431	CU3035	Chip C.	CM105 W5R 102K 50VAT
C433	CU3035	Chip C.	CM105 W5R 102K 50VAT
C434	CU3013	Chip C.	CM105 CH 150K 50VAT
C435	CU3007	Chip C.	CM105 CH 060C 50VAT
C437	CU3002	Chip C.	CM105 CH 010C 50VAT
C438	CU3008	Chip C.	CM105 CH 070C 50VAT
C439	CU3012	Chip C.	CM105 CH 120K 50VAT
C440	CU3035	Chip C.	CM105 W5R 102K 50VAT
C441	CU3014	Chip C.	CM105 CH 180K 50VAT
C442	CU3009	Chip C.	CM105 CH 080C 50VAT
C444	CU3004	Chip C.	CM105 CH 030C 50VAT
C445	CU3009	Chip C.	CM105 CH 080C 50VAT
C446	CU3006	Chip C.	CM105 CH 050C 50VAT
C447	CU3004	Chip C.	CM105 CH 030C 50VAT
C448	CU3052	Chip C.	CM105 W5R 103K 25VAT
C449	CU3003	Chip C.	CM105 CH 020C 50VAT
C450	CU3005	Chip C.	CM105 CH 040C 50VAT
C451	CU3035	Chip C.	CM105 W5R 102K 50VAT
C452	CU3035	Chip C.	CM105 W5R 102K 50VAT
C453	CU3054	Chip C.	CM105 W5R 223K 25VAT
C454	CU3035	Chip C.	CM105 W5R 102K 50VAT
C455	CU3035	Chip C.	CM105 W5R 102K 50VAT
C456	CE0032	Electrolytic C.	16MV 4R7 UWA
C457	CU3013	Chip C.	CM105 CH 150K 50VAT
C458	CU3054	Chip C.	CM105 W5R 223K 25VAT
C459	CU3035	Chip C.	CM105 W5R 102K 50VAT
C460	CU3035	Chip C.	CM105 W5R 102K 50VAT
C461	CU3035	Chip C.	CM105 W5R 102K 50VAT
C462	CU3011	Chip C.	CM105 CH 100D 50VAT
C463	CU3013	Chip C.	CM105 CH 150K 50VAT
C464	CU3035	Chip C.	CM105 W5R 102K 50VAT
C465	CU3004	Chip C.	CM105 CH 030C 50VAT
C466	CU3003	Chip C.	CM105 CH 020C 50VAT
C467	CU3035	Chip C.	CM105 W5R 102K 50VAT
C468	CU3035	Chip C.	CM105 W5R 102K 50VAT
C469	CU3035	Chip C.	CM105 W5R 102K 50VAT
C470	CU3035	Chip C.	CM105 W5R 102K 50VAT
C471	CU3013	Chip C.	CM105 CH 150K 50VAT
C472	CU3008	Chip C.	CM105 CH 070C 50VAT
C473	CU3003	Chip C.	CM105 CH 020C 50VAT
C474	CU3006	Chip C.	CM105 CH 050C 50VAT

Ref. No.	Parts No.	Description	Parts Name
C475	CU3035	Chip C.	CM105 W5R 102K 50VAT
C476	CU3004	Chip C.	CM105 CH 030C 50VAT
C477	CU3035	Chip C.	CM105 W5R 102K 50VAT
C478	CU3035	Chip C.	CM105 W5R 102K 50VAT
C479	CU3035	Chip C.	CM105 W5R 102K 50VAT
C480	CU3052	Chip C.	CM105 W5R 103K 25VAT
C481	CU3035	Chip C.	CM105 W5R 102K 50VAT
C482	CU3035	Chip C.	CM105 W5R 102K 50VAT
C483	CE0024	Electrolytic C.	35MV 2R2 UW
C484	CU3035	Chip C.	CM105 W5R 102K 50VAT
C485	CU3014	Chip C.	CM105 CH 180K 50VAT
C486	CU3025	Chip C.	CM105 CH 151K 50VAT
C487	CU3023	Chip C.	CM105 CH 101K 50VAT
C488	CU3052	Chip C.	CM105 W5R 103K 25VAT
C489	CU3023	Chip C.	CM105 CH 101K 50VAT
C491	CU3035	Chip C.	CM105 W5R 102K 50VAT
C490	CU3023	Chip C.	CM105 CH 101K 50VAT
C492	CU3014	Chip C.	CM105 CH 180K 50VAT
C493	CU3017	Chip C.	CM105 CH 330K 50VAT
C494	CU3058	Chip C.	GR39CH221 J 50PT
C495	CU3019	Chip C.	CM105 CH 470K 50VAT
C496	CU3035	Chip C.	CM105 W5R 102K 50VAT
C497	CU3023	Chip C.	CM105 CH 101K 50VAT
C498	CU3052	Chip C.	CM105 W5R 103K 25VAT
C499	CU3035	Chip C.	CM105 W5R 102K 50VAT
C500	CU3021	Chip C.	CM105 CH 680K 50VAT
C501	CU3023	Chip C.	CM105 CH 101K 50VAT
C502	CU3021	Chip C.	CM105 CH 680K 50VAT
C503	CU3015	Chip C.	CM105 CH 220K 50VAT
C504	CU3002	Chip C.	CM105 CH 010C 50VAT
C505	CU3035	Chip C.	CM105 W5R 102K 50VAT
C506	CU3035	Chip C.	CM105 W5R 102K 50VAT
C507	CU3003	Chip C.	CM105 CH 020C 50VAT
C508	CU3004	Chip C.	CM105 CH 030C 50VAT
C510	CU3019	Chip C.	CM105 CH 470K 50VAT
C511	CU3052	Chip C.	CM105 W5R 103K 25VAT
C512	CU3052	Chip C.	CM105 W5R 103K 25VAT
C513	CU3035	Chip C.	CM105 W5R 102K 50VAT
C514	CU3008	Chip C.	CM105 CH 070C 50VAT
C515	CU3004	Chip C.	CM105 CH 030C 50VAT
C516	CU3008	Chip C.	CM105 CH 070C 50VAT
C517	CU3035	Chip C.	CM105 W5R 102K 50VAT
C518	CU3035	Chip C.	CM105 W5R 102K 50VAT
C519	CE0032	Electrolytic C.	16MV 4R7 UWA
C520	CU3035	Chip C.	CM105 W5R 102K 50VAT
C521	CU3015	Chip C.	CM105 CH 220K 50VAT
C522	CU3035	Chip C.	CM105 W5R 102K 50VAT
C523	CU3006	Chip C.	CM105 CH 050C 50VAT
C524	CU3035	Chip C.	CM105 W5R 102K 50VAT
C525	CU3011	Chip C.	CM105 CH 100D 50VAT
C526	CU3052	Chip C.	CM105 W5R 103K 25VAT
C527	CU3003	Chip C.	CM105 CH 020C 50VAT
C528	CU3035	Chip C.	CM105 W5R 102K 50VAT
C529	CU3035	Chip C.	CM105 W5R 102K 50VAT
C530	CU3035	Chip C.	CM105 W5R 102K 50VAT
C531	CU3035	Chip C.	CM105 W5R 102K 50VAT
C533	CU3059	Chip C.	CM105 Y5V 104Z 25VAT
C534	CS0220	Chip Tantal	TMC-M1C 225 MTR

Ref. No.	Parts No.	Description	Parts Name	Ref. No.	Parts No.	Description	Parts Name
C535	CU3035	Chip C.	CM105 W5R 102K 50VAT	R431	RK3054	Chip R.	MCR03 EZ0J 223
C536	CU3035	Chip C.	CM105 W5R 102K 50VAT	R432	RK3030	Chip R.	MCR03 EZ0J 221
C537	CU3002	Chip C.	CM105 CH 010C 50VAT	R433	RK3038	Chip R.	MCR03 EZ0J 102
C538	CU3035	Chip C.	CM105 W5R 102K 50VAT	R434	RK3026	Chip R.	MCR03 EZ0J 101
C539	CS0236	Chip Tantal	TMC-M0J 685 MTR	R436	RK3014	Chip R.	MCR03 EZ0J 100
C540	CS0210	Chip Tantal	TMC-M0J 156 MTR	R437	RK3046	Chip R.	MCR03 EZ0J 472
C541	CU3035	Chip C.	CM105 W5R 102K 50VAT	R438	RK3038	Chip R.	MCR03 EZ0J 102
C542	CS0063	Chip Tantal	TMC 1V104 TR	R440	RK3026	Chip R.	MCR03 EZ0J 101
C543	CS0216	Chip Tantal	TMC-M1A 106 MTR	R441	RK3044	Chip R.	MCR03 EZ0J 332
C559	CS0063	Chip Tantal	TMC 1V104 TR	R442	RK3038	Chip R.	MCR03 EZ0J 102
C560	CU3035	Chip C.	CM105 W5R 102K 50VAT	R443	RK3050	Chip R.	MCR03 EZ0J 103
C561	CU3035	Chip C.	CM105 W5R 102K 50VAT	R444	RK3046	Chip R.	MCR03 EZ0J 472
C563	CU3059	Chip C.	CM105 Y5V 104Z 25VAT	R446	RK3062	Chip R.	MCR03 EZ0J 104
C564	CS0220	Chip Tantal	TMC-M1C 225 MTR	R447	RK3038	Chip R.	MCR03 EZ0J 102
C565	CU3035	Chip C.	CM105 W5R 102K 50VAT	R448	RK3030	Chip R.	MCR03 EZ0J 221
C566	CU3011	Chip C.	CM105 CH 100D 50VAT	R449	RK3057	Chip R.	MCR03 EZ0J 393
C567	CS0216	Chip Tantal	TMC-M1A 106 MTR	R450	RK3050	Chip R.	MCR03 EZ0J 103
C568	CU3056	Chip C.	CM105 Y5V 473Z 25VAT	R451	RK3038	Chip R.	MCR03 EZ0J 102
C569	CS0063	Chip Tantal	TMC 1V104 TR	R452	RK3054	Chip R.	MCR03 EZ0J 223
C570	CS0063	Chip Tantal	TMC 1V104 TR	R453	RK3050	Chip R.	MCR03 EZ0J 103
C571	CU3035	Chip C.	CM105 W5R 102K 50VAT	R454	RK3053	Chip R.	MCR03 EZ0J 183
C584	CU3035	Chip C.	CM105 W5R 102K 50VAT	R455	RK3046	Chip R.	MCR03 EZ0J 472
C585	CU3035	Chip C.	CM105 W5R 102K 50VAT	R456	RK3054	Chip R.	MCR03 EZ0J 223
C586	CU3006	Chip C.	CM105 CH 050C 50VAT	R457	RK3050	Chip R.	MCR03 EZ0J 103
C588	CU3035	Chip C.	CM105 W5R 102K 50VAT	R458	RK3038	Chip R.	MCR03 EZ0J 102
C591	CU3035	Chip C.	CM105 W5R 102K 50VAT	R459	RK3050	Chip R.	MCR03 EZ0J 103
C592	CU3035	Chip C.	CM105 W5R 102K 50VAT	R460	RK3050	Chip R.	MCR03 EZ0J 103
C595	CU3064	Chip C.	CM105 CH 1R5C 50VAT	R461	RK3044	Chip R.	MCR03 EZ0J 332
C596	CU3035	Chip C.	CM105 W5R 102K 50VAT	R462	RK3058	Chip R.	MCR03 EZ0J 473
C600	CU3003	Chip C.	CM105 CH 020C 50VAT	R463	RK3038	Chip R.	MCR03 EZ0J 102
TC401	CT0031	Trimmer	CTZ-05AW	R464	RK3062	Chip R.	MCR03 EZ0J 104
TC402	CT0031	Trimmer	CTZ-05AW	R465	RK3044	Chip R.	MCR03 EZ0J 332
TC403	CT0031	Trimmer	CTZ-05AW	R466	RK3026	Chip R.	MCR03 EZ0J 101
TC404	CT0031	Trimmer	CTZ-05AW	R467	RK3026	Chip R.	MCR03 EZ0J 101
TC405	CT0031	Trimmer	CTZ-05AW	R468	RK3026	Chip R.	MCR03 EZ0J 101
TC406	CT0031	Trimmer	CTZ-05AW	R469	RK3026	Chip R.	MCR03 EZ0J 101
R408	RK3034	Chip R.	MCR03 EZ0J 471	R470	RK3026	Chip R.	MCR03 EZ0J 101
R409	RK3038	Chip R.	MCR03 EZ0J 102	R471	RK3074	Chip R.	MCR03 EZ0J 105
R410	RK3072	Chip R.	MCR03 EZ0J 684	R472	RK3059	Chip R.	MCR03 EZ0J 563
R411	RK3026	Chip R.	MCR03 EZ0J 101	R473	RK3018	Chip R.	MCR03 EZ0J 220
R412	RK3038	Chip R.	MCR03 EZ0J 102	R474	RK3026	Chip R.	MCR03 EZ0J 101
R413	RK3062	Chip R.	MCR03 EZ0J 104	R475	RK3074	Chip R.	MCR03 EZ0J 105
R414	RK3026	Chip R.	MCR03 EZ0J 101	R476	RK3074	Chip R.	MCR03 EZ0J 105
R415	RK3026	Chip R.	MCR03 EZ0J 101	R477	RK3050	Chip R.	MCR03 EZ0J 103
R417	RK3062	Chip R.	MCR03 EZ0J 104	R478	RK3056	Chip R.	MCR03 EZ0J 333
R418	RK3047	Chip R.	MCR03 EZ0J 562	R479	RK3026	Chip R.	MCR03 EZ0J 101
R419	RK3052	Chip R.	MCR03 EZ0J 153	R480	RK3038	Chip R.	MCR03 EZ0J 102
R420	RK3032	Chip R.	MCR03 EZ0J 331	R481	RK3026	Chip R.	MCR03 EZ0J 101
R421	RK3010	Chip R.	MCR03 EZ0J 4R7	R482	RK3034	Chip R.	MCR03 EZ0J 471
R422	RK3030	Chip R.	MCR03 EZ0J 221	R483	RK3058	Chip R.	MCR03 EZ0J 473
R424	RK3044	Chip R.	MCR03 EZ0J 332	R484	RK3030	Chip R.	MCR03 EZ0J 221
R425	RK3030	Chip R.	MCR03 EZ0J 221	R485	RK3038	Chip R.	MCR03 EZ0J 102
R426	RK3050	Chip R.	MCR03 EZ0J 103	R486	RK3038	Chip R.	MCR03 EZ0J 102
R427	RK3030	Chip R.	MCR03 EZ0J 331	R487	RK3026	Chip R.	MCR03 EZ0J 101
R428	RK3010	Chip R.	MCR03 EZ0J 4R7	R488	RK3038	Chip R.	MCR03 EZ0J 102
R430	RK3048	Chip R.	MCR03 EZ0J 682	R489	RK3022	Chip R.	MCR03 EZ0J 470
				R490	RK3046	Chip R.	MCR03 EZ0J 472
				R491	RK3046	Chip R.	MCR03 EZ0J 472

Ref. No.	Parts No.	Description	Parts Name	Ref. No.	Parts No.	Description	Parts Name
R492	RK3030	Chip R.	MCR03 EZ0J 221	L416	QK0095	Coil	0.5 - 2.2 - 2.5T
R493	RK3050	Chip R.	MCR03 EZ0J 103	L417	QK0063	Coil	0.5 - 3 - 3.5T
R494	RK3054	Chip R.	MCR03 EZ0J 223	L418	QA0065	IFT	BPF-T QA65
R495	RK3034	Chip R.	MCR03 EZ0J 471	L419	QC0003	Chip L.	MLF3216A 1R0M
R496	RK3050	Chip R.	MCR03 EZ0J 103	L420	QA0065	IFT	BPF-T QA65
R497	RK3054	Chip R.	MCR03 EZ0J 223	L421	QA0065	IFT	BPF-T QA65
R498	RK3054	Chip R.	MCR03 EZ0J 223	L422	QA0064	IFT	QA64
R499	RK3054	Chip R.	MCR03 EZ0J 223	L423	QA0064	IFT	QA64
R500	RK3058	Chip R.	MCR03 EZ0J 473	L424	QA0064	IFT	QA64
R501	RK3050	Chip R.	MCR03 EZ0J 103	L425	QK0063	Coil	0.5 - 3 - 3.5T
R502	RK3058	Chip R.	MCR03 EZ0J 473	L426	QC0003	Chip L.	MLF3216A 1R0M
R503	RK3050	Chip R.	MCR03 EZ0J 103	L427	QC0009	Chip L.	MLF3216D R10M
R504	RK3050	Chip R.	MCR03 EZ0J 103	L428	QC0215	Chip L.	MLF2012A 1R0K T
R505	RK3026	Chip R.	MCR03 EZ0J 101	L435	QC0215	Chip L.	MLF2012A 1R0K T
R506	RK3054	Chip R.	MCR03 EZ0J 223	IC401	XA0143	IC	M67749M (UHF)
R507	RK3026	Chip R.	MCR03 EZ0J 101	IC402	XA0148	IC	M67748L (VHF)
R508	RK3038	Chip R.	MCR03 EZ0J 102	IC403	XA0173	IC	MB1511 PFV-G-BND-EF
R509	RK3026	Chip R.	MCR03 EZ0J 101	IC404	XA0173	IC	MB1511 PFV-G-BND-EF
R510	RK3038	Chip R.	MCR03 EZ0J 102	D401	XD0230	Diode	DAN202U T106
R511	RK3050	Chip R.	MCR03 EZ0J 103	D402	XD0129	Diode	1SS318 TT11
R528	RK3054	Chip R.	MCR03 EZ0J 223	D403	XD0066	Diode	RLS135-TE-11
R529	RK3054	Chip R.	MCR03 EZ0J 223	D404	XD0066	Diode	RLS135-TE-11
R530	RK3050	Chip R.	MCR03 EZ0J 103	D408	XD0120	Diode	MA704WK TX
R531	RK3058	Chip R.	MCR03 EZ0J 473	D409	XD0120	Diode	MA704WK TX
R532	RK3058	Chip R.	MCR03 EZ0J 473	D410	XD0232	Diode	MA8027-L TX
R533	RK3038	Chip R.	MCR03 EZ0J 102	D411	XD0066	Diode	RLS135-TE-11
R534	RK3054	Chip R.	MCR03 EZ0J 223	D412	XD0066	Diode	RLS135-TE-11
R535	RK3038	Chip R.	MCR03 EZ0J 102	D413	XD0132	Diode	1SV215 TPH4
R536	RK3074	Chip R.	MCR03 EZ0J 105	D414	XD0132	Diode	1SV215 TPH4
R537	RK3026	Chip R.	MCR03 EZ0J 101	D415	XD0132	Diode	1SV215 TPH4
R538	RK3038	Chip R.	MCR03 EZ0J 102	D416	XD0230	Diode	DAN202U T106
R539	RK3038	Chip R.	MCR03 EZ0J 102	D417	XD0130	Diode	DA204U T106
R540	RK3034	Chip R.	MCR03 EZ0J 471	Q403	XT0096	Transistor	2SC4099T106N
R541	RK3050	Chip R.	MCR03 EZ0J 103	Q404	XT0035	Transistor	2SC3429 T85R
R557	RK3054	Chip R.	MCR03 EZ0J 223	Q405	XT0035	Transistor	2SC3429 T85R
R558	RK3042	Chip R.	MCR03 EZ0J 222	Q406	XT0097	Transistor	2SC4393TE85L
R559	RK3050	Chip R.	MCR03 EZ0J 103	Q407	XU0029	Transistor	DTC114YU
R560	RK3014	Chip R.	MCR03 EZ0J 100	Q408	XT0030	Transistor	2SC3356 T1 BR25
R563	RK3022	Chip R.	MCR03 EZ0J 470	Q409	XT0030	Transistor	2SC3356 T1 BR25
R570	RK3026	Chip R.	MCR03 EZ0J 101	Q410	XT0030	Transistor	2SC3356 T1 BR25
VR401	RH0060	Trim. pot	MVR32HXBN 473	Q411	XT0070	Transistor	FMS1 T98
L401	QK0076	Coil	0.6 - 2 - 2.5T	Q412	XT0095	Transistor	2SC4081 T106R
L402	QK0036	Coil	0.6 - 3 - 1.5T	Q413	XT0038	Transistor	2SA1037 KT146R
L403	QK0036	Coil	0.6 - 3 - 1.5T	Q414	XT0095	Transistor	2SC4081T106R
L404	QK0036	Coil	0.6 - 3 - 1.5T	Q415	XT0096	Transistor	2SC4099T106N
L405	QK0102	Coil	0.5 - 2.6 - 1.5T	Q416	XT0030	Transistor	2SC3356 T1 BR25
L406	QK0102	Coil	0.5 - 2.6 - 1.5T	Q417	XT0030	Transistor	2SC3356 T1 BR25
L407	QK0102	Coil	0.5 - 2.6 - 1.5T	Q418	XE0015	FET	2SK302 YTE85
L408	QK0102	Coil	0.5 - 2.6 - 1.5T	Q419	XU0029	Transistor	DTC114YU
L409	QK0102	Coil	0.5 - 2.6 - 1.5T	Q420	XT0030	Transistor	2SC3356 T1 BR25
L410	QC0003	Chip L.	MLF3216A 1R0M	Q421	XT0030	Transistor	2SC3356 T1 BR25
L411	QK0063	Coil	0.5 - 3 - 3.5T	Q422	XU0029	Transistor	DTC114YU
L412	QC0003	Chip L.	MLF3216A 1R0M	Q423	XU0029	Transistor	DTC114YU
L413	QK0037	Coil	0.6 - 3 - 2.5T	Q428	XU0029	Transistor	DTC114YU
L414	QK0036	Coil	0.6 - 3 - 1.5T				
L415	QK0063	Coil	0.5 - 3 - 3.5T				

Ref. No.	Parts No.	Description	Parts Name	Ref. No.	Parts No.	Description	Parts Name
				IF Unit			
FB401	QB0008	Ferrite bead	HF30ACB201209-T	C101	CU3052	Chip C.	CM105 W5R 103K
FB402	QB0008	Ferrite bead	HF30ACB201209-T	C102	CU3052	Chip C.	CM105 W5R 103K
FB403	QB0008	Ferrite bead	HF30ACB201209-T	C103	CU3052	Chip C.	CM105 W5R 103K
FB404	QB0008	Ferrite bead	HF30ACB201209-T	C104	CU3009	Chip C.	CM105 CH 080C
FB405	QB0008	Ferrite bead	HF30ACB201209-T	C105	CU3012	Chip C.	CM105 CH 120K
FB406	QB0008	Ferrite bead	HF30ACB201209-T	C106	CS0211	Chip Tantal	TMC-M0J 336 TR
FB407	QB0008	Ferrite bead	HF30ACB201209-T	C107	CU3059	Chip C.	CM105 Y5V 104Z
FB408	QB0008	Ferrite bead	HF30ACB201209-T	C108	CU3059	Chip C.	CM105 Y5V 104Z
XF401	XF0008	Crystal Filter	23.05MHz UM-5 (E)	C109	CU3059	Chip C.	CM105 Y5V 104Z
XF402	XF0003	Crystal Filter	55M15B1 (T)	C110	CU3021	Chip C.	CM105 CH 680K
X401	XQ0051	Crystal	UM1 12.8MHz	C111	CU3059	Chip C.	CM105 Y5V 104Z
GN401	UE0039	Connector	TZL-P02P-A1	C112	CU3035	Chip C.	CM105 W5R 102K
W401	UX1031	Wire	DJ580 W401	C113	CU3026	Chip C.	CM105 CH 181K 50VAT
W402	UX1002	Wire	DJF5 W402	C114	CU3052	Chip C.	CM105 W5R 103K
W403	MYDJH6AA	Wire	#26Y 2 - 6.5 - 2	C115	CU3054	Chip C.	CM105 W5R 223K
W404	MKDJO8AA	Wire	#26Y 2 - 8 - 2	C116	CU3059	Chip C.	CM105 Y5V 104Z
	UP0214C	PCB	DJF5 RF PCB-C	C117	CU3019	Chip C.	CM105 CH 470K
	TS0061		L Shield	C118	CU3052	Chip C.	CM105 W5R 103K
	UF0047		Round Pin R9 X 10	C119	CU3056	Chip C.	CM105 Y5V 473Z
	YZ0001		Silicon Grease	C120	CU3059	Chip C.	CM105 Y5V 104Z
				C121	CU3035	Chip C.	CM105 W5R 102K
				C122	CU3056	Chip C.	CM105 Y5V 473Z
				C123	CS0237	Chip Tantal	TMC-M1A 475 TR
				C124	CU3059	Chip C.	CM105 Y5V 104Z
				C125	CU3059	Chip C.	CM105 Y5V 104Z
				C126	CS0237	Chip Tantal	TMC-M1A 475 TR
				C127	CU3035	Chip C.	CM105 W5R 102K
				C128	CU3035	Chip C.	CM105 W5R 102K
				C129	CU3035	Chip C.	CM105 W5R 102K
				C131	CU3052	Chip C.	CM105 W5R 103K
				C132	CU3059	Chip C.	CM105 Y5V 104Z
				C133	CS0049	Chip Tantal	TMC SA1C 105 MTR
				C134	CU3024	Chip C.	CM105 CH 121K
				C135	CU3059	Chip C.	CM105 Y5V 104Z
				C136	CU3052	Chip C.	CM105 W5R 103K
				C137	CU3019	Chip C.	CM105 CH 470K
				C138	CU3013	Chip C.	CM105 CH 150K
				C139	CU3006	Chip C.	CM105 CH 050C
				C140	CU3035	Chip C.	CM105 W5R 102K
				C141	CU3059	Chip C.	CM105 Y5V 104Z
				C142	CU3059	Chip C.	CM105 Y5V 104Z
				C143	CU3059	Chip C.	CM105 Y5V 104Z
				C144	CS0211	Chip Tantal	TMC-M0J 336 TR
				C145	CU3021	Chip C.	CM105 CH 680K
				C146	CU3052	Chip C.	CM105 W5R 103K
				C147	CU3054	Chip C.	CM105 W5R 223K
				C148	CU3035	Chip C.	CM105 W5R 102K
				C149	CU3026	Chip C.	CM105 CH 181K 50VAT
				C150	CU3035	Chip C.	CM105 W5R 102K
				C151	CU3019	Chip C.	CM105 CH 470K
				C152	CU3052	Chip C.	CM105 W5R 103K
				C153	CU3056	Chip C.	CM105 Y5V 473Z
				C154	CU3059	Chip C.	CM105 Y5V 104Z
				C155	CU3035	Chip C.	CM105 W5R 102K
				C156	CU3056	Chip C.	CM105 Y5V 473Z
				C157	CS0237	Chip Tantal	TMC-M1A 475 TR
				C158	CU3059	Chip C.	CM105 Y5V 104Z

Ref. No.	Parts No.	Description	Parts Name	Ref. No.	Parts No.	Description	Parts Name
C159	CS0237	Chip Tantal	TMC-M1A 475 TR	C228	CU3035	Chip C.	CM105 W5R 102K
C160	CU3059	Chip C.	CM105 Y5V 104Z	C229	CE0307	Electrolytic C.	ECEV 0JA 470P
C161	CU3035	Chip C.	CM105 W5R 102K	C230	CS0237	Chip Tantal	TMC-M1A 475 TR
C163	CU3059	Chip C.	CM105 Y5V 104Z	C234	CU3029	Chip C.	CM105 W5R 331K 50VAT
C164	CU3052	Chip C.	CM105 W5R 103K	C237	CS0209	Chip Tantal	TMC-M0J 106 TR
C165	CU3059	Chip C.	CM105 Y5V 104Z	C238	CU3035	Chip C.	CM105 W5R 102K
C166	CU3035	Chip C.	CM105 W5R 102K	C239	CU3035	Chip C.	CM105 W5R 102K
C167	CU3059	Chip C.	CM105 Y5V 104Z	C240	CS0057	Chip Tantal	TMC 0J 225TR
C169	CU3035	Chip C.	CM105 W5R 102K	C241	CU3092	Chip C.	CM105 CH 510J
C171	CU3035	Chip C.	CM105 W5R 102K	C242	CU3092	Chip C.	CM105 CH 510J
C172	CE0306	Electrolytic C.	ECEV 0JA 330R	C244	CS0211	Chip Tantal	TMC-M0J 336 TR
C173	CS0210	Chip Tantal	TMC-M0J 156 TR	C245	CU3035	Chip C.	CM105 W5R 102K
C174	CU3035	Chip C.	CM105 W5R 102K	C246	CU3035	Chip C.	CM105 W5R 102K
C175	CE0313	Electrolytic C.	ECEV 1CA 220P	C247	CU3035	Chip C.	CM105 W5R 102K
C176	CU3035	Chip C.	CM105 W5R 102K	C250	CU3059	Chip C.	CM105 Y5V 104Z
C177	CS0210	Chip Tantal	TMC-M0J 156 TR	C251	CU3059	Chip C.	CM105 Y5V 104Z
C178	CU3059	Chip C.	CM105 Y5V 104Z	C252	CU3059	Chip C.	CM105 Y5V 104Z
C179	CS0210	Chip Tantal	TMC-M0J 156 TR	C253	CU3052	Chip C.	CM105 W5R 103K
C180	CU3035	Chip C.	CM105 W5R 102K	C254	CU3023	Chip C.	CM105 CH 101K
C181	CS0237	Chip Tantal	TMC-M1A 475 TR	C255	CU3035	Chip C.	CM105 W5R 102K
C182	CS0210	Chip Tantal	TMC-M0J 156 TR	C260	CU3023	Chip C.	CM105 CH 101K
C183	CU3035	Chip C.	CM105 W5R 102K	R101	RK3026	Chip R.	MCR03 EZ 0J 101
C184	CS0237	Chip Tantal	TMC-M1A 475 TR	R102	RK3072	Chip R.	MCR03 EZ 0J 684
C185	CS0049	Chip Tantal	TMC SA1C 105 MTR	R103	RK3038	Chip R.	MCR03 EZ 0J 102
C186	CU3035	Chip C.	CM105 W5R 102K	R104	RK3026	Chip R.	MCR03 EZ 0J 101
C187	CU3035	Chip C.	CM105 W5R 102K	R105	RK3030	Chip R.	MCR03 EZ 0J 221
C188	CU3052	Chip C.	CM105 W5R 103K	R106	RK3038	Chip R.	MCR03 EZ 0J 102
C189	CS0060	Chip Tantal	TMC SA1E 474 MTR	R107	RK3050	Chip R.	MCR03 EZ 0J 103
C190	CS0061	Chip Tantal	TMC 1V 224 TR	R108	RK3038	Chip R.	MCR03 EZ 0J 102
C191	CS0061	Chip Tantal	TMC 1V 224 TR	R109	RK3070	Chip R.	MCR03 EZ 0J 474
C192	CU3023	Chip C.	CM105 CH 101K	R110	RK3035	Chip R.	MCR03 EZ 0J 561
C193	CU3023	Chip C.	CM105 CH 101K	R111	RK3042	Chip R.	MCR03 EZ 0J 222
C194	CU3023	Chip C.	CM105 CH 101K	R112	RK3038	Chip R.	MCR03 EZ 0J 102
C195	CU3023	Chip C.	CM105 CH 101K	R113	RK3038	Chip R.	MCR03 EZ 0J 102
C200	CU3035	Chip C.	CM105 W5R 102K	R114	RK3054	Chip R.	MCR03 EZ 0J 223
C205	CU3035	Chip C.	CM105 W5R 102K	R115	RK3050	Chip R.	MCR03 EZ 0J 103
C206	CU3024	Chip C.	CM105 CH 121K	R116	RK3042	Chip R.	MCR03 EZ 0J 222
C207	CU3023	Chip C.	CM105 CH 101K	R117	RK3026	Chip R.	MCR03 EZ 0J 101
C208	CU3035	Chip C.	CM105 W5R 102K	R118	RK3050	Chip R.	MCR03 EZ 0J 103
C209	CU3035	Chip C.	CM105 W5R 102K	R119	RK3046	Chip R.	MCR03 EZ 0J 472
C210	CS0069	Chip Tantal	TMC 1V 154 TR	R120	RK3050	Chip R.	MCR03 EZ 0J 103
C211	CU3031	Chip C.	CM105 W5R 471K	R121	RK3103	Chip R.	MCR03 EZ 0J 753
C212	CU3031	Chip C.	CM105 W5R 471K	R122	RK3058	Chip R.	MCR03 EZ 0J 473
C213	CS0209	Chip Tantal	TMC-M0J 106 TR	R123	RK3038	Chip R.	MCR03 EZ 0J 102
C214	CS0209	Chip Tantal	TMC-M0J 106 TR	R124	RK3044	Chip R.	MCR03 EZ 0J 332
C215	CU3043	Chip C.	CM105 W5R 472K	R125	RK3042	Chip R.	MCR03 EZ 0J 222
C216	CU3019	Chip C.	CM105 CH 470K	R126	RK3001	Chip R.	MCR03 EZ 0J 000
C217	CU3052	Chip C.	CM105 W5R 103K	R127	RK3018	Chip R.	MCR03 EZ 0J 220
C218	CU3031	Chip C.	CM105 W5R 471K	R128	RK3050	Chip R.	MCR03 EZ 0J 103
C219	CU3031	Chip C.	CM105 W5R 471K	R129	RK3058	Chip R.	MCR03 EZ 0J 473
C220	CS0049	Chip Tantal	TMC SA1C 105 MTR	R130	RK3035	Chip R.	MCR03 EZ 0J 561
C221	CS0049	Chip Tantal	TMC SA1C 105 MTR	R131	RK3054	Chip R.	MCR03 EZ 0J 223
C222	CE0307	Electrolytic C.	ECEV 0JA 470P	R132	RK3046	Chip R.	MCR03 EZ 0J 472
C223	CU3035	Chip C.	CM105 W5R 102K	R133	RK3028	Chip R.	MCR03 EZ 0J 151
C224	CU3035	Chip C.	CM105 W5R 102K	R134	RK3050	Chip R.	MCR03 EZ 0J 103
C225	CE0307	Electrolytic C.	ECEV 0JA 470P	R135	RK3050	Chip R.	MCR03 EZ 0J 103
C226	CU3059	Chip C.	CM105 Y5V 104Z	R136	RK3050	Chip R.	MCR03 EZ 0J 103
C227	CU3059	Chip C.	CM105 Y5V 104Z				

Ref. No.	Parts No.	Description	Parts Name	Ref. No.	Parts No.	Description	Parts Name
R137	RK3062	Chip R.	MCR03 EZ 0J 104	R198	RK3050	Chip R.	MCR03 EZ 0J 103
R140	RK3058	Chip R.	MCR03 EZ 0J 473	R199	RK3026	Chip R.	MCR03 EZ 0J 101
R141	RK3062	Chip R.	MCR03 EZ 0J 104	R200	RK3058	Chip R.	MCR03 EZ 0J 473
R142	RK3070	Chip R.	MCR03 EZ 0J 474	R202	RK3050	Chip R.	MCR03 EZ 0J 103
R143	RK3044	Chip R.	MCR03 EZ 0J 332	R203	RK3026	Chip R.	MCR03 EZ 0J 101
R144	RK3050	Chip R.	MCR03 EZ 0J 103	R204	RK3058	Chip R.	MCR03 EZ 0J 473
R145	RK3001	Chip R.	MCR03 EZ 0J 000	R206	RK3050	Chip R.	MCR03 EZ 0J 103
R146	RK3038	Chip R.	MCR03 EZ 0J 102	R207	RK3044	Chip R.	MCR03 EZ 0J 332
R147	RK3038	Chip R.	MCR03 EZ 0J 102	R208	RK3008	Chip R.	MCR03 EZ 0J 3R3
R148	RK3070	Chip R.	MCR03 EZ 0J 474	R209	RK3038	Chip R.	MCR03 EZ 0J 102
R149	RK3062	Chip R.	MCR03 EZ 0J 104	R210	RK3026	Chip R.	MCR03 EZ 0J 101
R150	RK3038	Chip R.	MCR03 EZ 0J 102	R211	RK3058	Chip R.	MCR03 EZ 0J 473
R151	RK3038	Chip R.	MCR03 EZ 0J 102	R212	RK3058	Chip R.	MCR03 EZ 0J 473
R152	RK3058	Chip R.	MCR03 EZ 0J 473	R213	RK3054	Chip R.	MCR03 EZ 0J 223
R153	RK3038	Chip R.	MCR03 EZ 0J 102	R214	RK3047	Chip R.	MCR03 EZ 0J 562
R154	RK3035	Chip R.	MCR03 EZ 0J 561	R216	RK3038	Chip R.	MCR03 EZ 0J 102
R155	RK3042	Chip R.	MCR03 EZ 0J 222	R217	RK3038	Chip R.	MCR03 EZ 0J 102
R156	RK3044	Chip R.	MCR03 EZ 0J 332	R218	RK3062	Chip R.	MCR03 EZ 0J 104
R157	RK3042	Chip R.	MCR03 EZ 0J 222	R219	RK3069	Chip R.	MCR03 EZ 0J 394
R158	RK3050	Chip R.	MCR03 EZ 0J 103	R220	RK3050	Chip R.	MCR03 EZ 0J 103
R159	RK3001	Chip R.	MCR03 EZ 0J 000	R221	RK3050	Chip R.	MCR03 EZ 0J 103
R160	RK3058	Chip R.	MCR03 EZ 0J 473	R222	RK3022	Chip R.	MCR03 EZ 0J 470
R161	RK3103	Chip R.	MCR03 EZ 0J 753	R223	RK3062	Chip R.	MCR03 EZ 0J 104
R162	RK3035	Chip R.	MCR03 EZ 0J 561	R224	RK3062	Chip R.	MCR03 EZ 0J 104
R163	RK3050	Chip R.	MCR03 EZ 0J 103	R225	RK3059	Chip R.	MCR03 EZ 0J 563
R164	RK3046	Chip R.	MCR03 EZ 0J 472	R226	RK3062	Chip R.	MCR03 EZ 0J 104
R165	RK3050	Chip R.	MCR03 EZ 0J 103	R227	RK3074	Chip R.	MCR03 EZ 0J 105
R166	RK3050	Chip R.	MCR03 EZ 0J 103	R228	RK3074	Chip R.	MCR03 EZ 0J 105
R167	RK3054	Chip R.	MCR03 EZ 0J 223	R229	RK3051	Chip R.	MCR03 EZ 0J 123
R168	RK3042	Chip R.	MCR03 EZ 0J 222	R230	RK3068	Chip R.	MCR03 EZ 0J 334
R169	RK3026	Chip R.	MCR03 EZ 0J 101	R231	RK3050	Chip R.	MCR03 EZ 0J 103
R170	RK3054	Chip R.	MCR03 EZ 0J 223	R232	RK3029	Chip R.	MCR03 EZ 0J 181
R171	RK3046	Chip R.	MCR03 EZ 0J 472	R233	RK3062	Chip R.	MCR03 EZ 0J 104
R172	RK3044	Chip R.	MCR03 EZ 0J 332	R234	RK3067	Chip R.	MCR03 EZ 0J 274
R173	RK3028	Chip R.	MCR03 EZ 0J 151	R235	RK3065	Chip R.	MCR03 EZ 0J 184
R174	RK3034	Chip R.	MCR03 EZ 0J 471	R236	RK3050	Chip R.	MCR03 EZ 0J 103
R176	RK3070	Chip R.	MCR03 EZ 0J 474	R237	RK3058	Chip R.	MCR03 EZ 0J 473
R177	RK3067	Chip R.	MCR03 EZ 0J 274	R238	RK0105	Chip R.	MCR10 EZ 0J 2R2
R178	RK3070	Chip R.	MCR03 EZ 0J 474	R239	RK3032	Chip R.	MCR03 EZ 0J 331
R179	RK3070	Chip R.	MCR03 EZ 0J 474	R240	RK3032	Chip R.	MCR03 EZ 0J 331
R180	RK3046	Chip R.	MCR03 EZ 0J 472	R241	RK3008	Chip R.	MCR03 EZ 0J 3R3
R181	RK3046	Chip R.	MCR03 EZ 0J 472	R242	RK3008	Chip R.	MCR03 EZ 0J 3R3
R182	RK3062	Chip R.	MCR03 EZ 0J 104	R243	RK3050	Chip R.	MCR03 EZ 0J 103
R183	RK3050	Chip R.	MCR03 EZ 0J 103	R244	RK3050	Chip R.	MCR03 EZ 0J 103
R184	RK3062	Chip R.	MCR03 EZ 0J 104	R245	RK3046	Chip R.	MCR03 EZ 0J 472
R185	RK3051	Chip R.	MCR03 EZ 0J 123	R246	RK3050	Chip R.	MCR03 EZ 0J 103
R186	RK3042	Chip R.	MCR03 EZ 0J 222	R247	RK3034	Chip R.	MCR03 EZ 0J 471
R187	RK3026	Chip R.	MCR03 EZ 0J 101	R248	RK3062	Chip R.	MCR03 EZ 0J 104
R188	RK3058	Chip R.	MCR03 EZ 0J 473	R249	RK3050	Chip R.	MCR03 EZ 0J 103
R189	RK3042	Chip R.	MCR03 EZ 0J 222	R250	RK3038	Chip R.	MCR03 EZ 0J 102
R190	RK3026	Chip R.	MCR03 EZ 0J 101	R251	RK3050	Chip R.	MCR03 EZ 0J 103
R191	RK3058	Chip R.	MCR03 EZ 0J 473	R252	RK3051	Chip R.	MCR03 EZ 0J 123
R192	RK3042	Chip R.	MCR03 EZ 0J 222	R253	RK3042	Chip R.	MCR03 EZ 0J 222
R193	RK3026	Chip R.	MCR03 EZ 0J 101	R254	RK3034	Chip R.	MCR03 EZ 0J 471
R194	RK3058	Chip R.	MCR03 EZ 0J 473	R255	RK3050	Chip R.	MCR03 EZ 0J 103
R195	RK3042	Chip R.	MCR03 EZ 0J 222	R256	RK3046	Chip R.	MCR03 EZ 0J 472
R196	RK3026	Chip R.	MCR03 EZ 0J 101	R257	RK3050	Chip R.	MCR03 EZ 0J 103
R197	RK3058	Chip R.	MCR03 EZ 0J 473	R258	RK3062	Chip R.	MCR03 EZ 0J 104



Ref. No.	Parts No.	Description	Parts Name	Ref. No.	Parts No.	Description	Parts Name
R259	RK3062	Chip R.	MCR03 EZ 0J 104	L101	QC0132	Chip L.	NL322522T-R68J-3
R260	RK3074	Chip R.	MCR03 EZ 0J 105	L102	QC0055	Chip L.	NL322522T-010M
R261	RK3050	Chip R.	MCR03 EZ 0J 103	L103	QC0039	Chip L.	NL322522T-1R0M
R263	RK3050	Chip R.	MCR03 EZ 0J 103	L104	QC0039	Chip L.	NL322522T-1R0M
R264	RK3054	Chip R.	MCR03 EZ 0J 223	L105	QC0039	Chip L.	NL322522T-1R0M
R265	RK3054	Chip R.	MCR03 EZ 0J 223	L106	QC0039	Chip L.	NL322522T-1R0M
R266	RK3054	Chip R.	MCR03 EZ 0J 223	IC101	XA0144	IC	TK10487MTR
R267	RK3054	Chip R.	MCR03 EZ 0J 223	IC102	XA0144	IC	TK10487MTR
R268	RK3074	Chip R.	MCR03 EZ 0J 105	IC103	XA0182	IC	S-81332HG-KC-T1
R269	RK3050	Chip R.	MCR03 EZ 0J 103	IC104	XA0172	IC	S-8053ALR-LJ-T1
R270	RK3038	Chip R.	MCR03 EZ 0J 102	IC105	XA0068	IC	M5218FP
R271	RK3058	Chip R.	MCR03 EZ 0J 473	IC106	XA0111	IC	NJM2073M
R272	RK3066	Chip R.	MCR03 EZ 0J 224	IC107	XA0184B	IC	HD4074719H (E)
R273	RK3074	Chip R.	MCR03 EZ 0J 105	IC107	XA0206	IC	HD4074719H (T)
R274	RK3062	Chip R.	MCR03 EZ 0J 104	IC108	XA0105	IC	MC145436
R275	RK3062	Chip R.	MCR03 EZ 0J 104	D101	XD0118	Diode	MA716
R276	RK3062	Chip R.	MCR03 EZ 0J 104	D102	XD0120	Diode	MA704WK
R277	RK3062	Chip R.	MCR03 EZ 0J 104	D103	XD0041	Diode	DAP202K
R278	RK3050	Chip R.	MCR03 EZ 0J 103	D104	XD0118	Diode	MA716
R279	RK3050	Chip R.	MCR03 EZ 0J 103	D105	XD0118	Diode	MA716
R280	RK3018	Chip R.	MCR03 EZ 0J 220	D106	XD0041	Diode	DAP202K
R281	RK3050	Chip R.	MCR03 EZ 0J 103	D108	XD0091	Diode	IMN10
R285	RK3062	Chip R.	MCR03 EZ 0J 104	D110	XD0129	Diode	1SS318
R286	RK3062	Chip R.	MCR03 EZ 0J 104	D111	XD0127	Diode	MA704WA TX
R287	RK3058	Chip R.	MCR03 EZ 0J 473	D113	XD0120	Diode	MA704WK
R288	RK3001	Chip R.	MCR03 EZ 0J 000	D116	XD0041	Diode	DAP202K
R289	RK3050	Chip R.	MCR03 EZ 0J 103	D117	XD0129	Diode	1SS318
R290	RK3048	Chip R.	MCR03 EZ 0J 682	D118	XD0232	Diode	MA8027-L TX
R291	RK3001	Chip R.	MCR03 EZ 0J 000	D119	XD0232	Diode	MA8027-L TX
R292	RK3001	Chip R.	MCR03 EZ 0J 000	D120	XD0129	Diode	1SS318
R293	RK3001	Chip R.	MCR03 EZ 0J 000	D121	XD0129	Diode	1SS318
R294	RK3074	Chip R.	MCR03 EZ 0J 105	Q101	XT0081	Transistor	2SC2714
R295	RK3038	Chip R.	MCR03 EZ 0J 102	Q102	XT0095	Transistor	2SC4081
R296	RK3062	Chip R.	MCR03 EZ 0J 104	Q103	XT0037	Transistor	2SC2412
R297	RK3036	Chip R.	MCR03 EZ 0J 681	Q104	XU0027	Transistor	FMA7
R298	RK3050	Chip R.	MCR03 EZ 0J 103	Q105	XU0002	Transistor	DTC114YK
R300	RK3062	Chip R.	MCR03 EZ 0J 104	Q106	XT0037	Transistor	2SC2412
R301	RK3038	Chip R.	MCR03 EZ 0J 102	Q107	XT0081	Transistor	2SC2714
R302	RK3001	Chip R.	MCR03 EZ 0J 000	Q108	XT0095	Transistor	2SC4081
R303	RK3001	Chip R.	MCR03 EZ 0J 000	Q109	XT0037	Transistor	2SC2412
R304	RK3050	Chip R.	MCR03 EZ 0J 103	Q110	XT0037	Transistor	2SC2412
R305	RK3038	Chip R.	MCR03 EZ 0J 102	Q111	XE0019	FET	2SJ144Y
R306	RK3050	Chip R.	MCR03 EZ 0J 103	Q112	XU0002	Transistor	DTC114YK
R307	RK1107	Chip R.	MCR18 EZ HJ 000E	Q113	XU0002	Transistor	DTC114YK
R308	RK3050	Chip R.	MCR03 EZ 0J 103	Q114	XU0029	Transistor	DTC114YU
R309	RK3058	Chip R.	MCR03 EZ 0J 473	Q115	XT0037	Transistor	2SC2412
VR103	RH0059	Trim. pot	MVR32 HXB N223	Q116	XT0088	Transistor	2SA1213
VR104	RH0059	Trim. pot	MVR32 HXB N223	Q117	XU0020	Transistor	FMW1
VR105	RH0064	Trim. pot	MVR32HXB N103	Q118	XT0088	Transistor	2SA1213
VR106	RH0064	Trim. pot	MVR32HXB N103	Q119	XU0020	Transistor	FMW1
VR107	RH0060	Trim. pot	MVR32HXB N 473	Q120	XT0088	Transistor	2SA1213
VR108	RH0060	Trim. pot	MVR32HXB N 473	Q121	XU0020	Transistor	FMW1
VR109	RH0064	Trim. pot	MVR32HXB N103	Q122	XT0088	Transistor	2SA1213
VR110	RH0094	Trim. pot	MVR32 474	Q123	XU0020	Transistor	FMW1
VR111	RH0059	Trim. pot	MVR32 HXB N223	Q124	XT0038	Transistor	2SA1037

Ref. No.	Parts No.	Description	Parts Name	Ref. No.	Parts No.	Description	Parts Name
Q125	XU0020	Transistor	FMW1	SW Unit			
Q126	XT0038	Transistor	2SA1037	SW601	UU0013	Switch	SKHUAB
Q127	XU0020	Transistor	FMW1	SW602	UU0013	Switch	SKHUAB
Q128	XT0088	Transistor	2SA1213	SW603	UU0013	Switch	SKHUAB
Q129	XU0020	Transistor	FMW1	R604	RK3001	Chip R.	MCR03 EZ0J 000 (T/TD only)
Q130	XU0028	Transistor	FMC2	R606	RK3001	Chip R.	MCR03 EZ0J 000 (E/ED only)
Q131	XU0029	Transistor	DTC114YU	C608	CU3035	Chip C.	CM105 W5R 102K 50VAT
Q132	XU0002	Transistor	DTC114YK	C609	CU3035	Chip C.	CM105 W5R 102K 50VAT
Q133	XT0038	Transistor	2SA1037	C610	CU3035	Chip C.	CM105 W5R 102K 50VAT
Q134	XU0002	Transistor	DTC114YK				
Q135	XU0002	Transistor	DTC114YK				
Q136	XU0019	Transistor	DTA114YK				
Q137	XU0002	Transistor	DTC114YK				
Q138	XU0012	Transistor	DTC114EK				
Q139	XT0037	Transistor	2SC2412				
Q140	XU0026	Transistor	FMG2				
Q141	XU0002	Transistor	DTC114YK				
Q142	XE0019	FET	2SJ144Y				
Q143	XU0001	Transistor	DTC143TK				
Q144	XU0029	Transistor	DTC114YU				
X101	XQ0043	Crystal	UM-5 22.595MHz (E)				
X102	XK0002	Discriminator	CDBM455C7				
X103	XQ0039	Crystal	UM-5 54.595MHz (T)				
X104	XK0002	Discriminator	CDBM455C7				
X105	XB0007	Crystal	CSAC 2.00MGC-TC				
X106	XB0001	Crystal	C4CA 03580000K01R				
FL101	XC0004	Filter	CFUM 455E				
FL102	XC0004	Filter	CFUM 455E				
CN101	UE0037	Connector	TZL-P10P-A1				
CN102	UE0139	Connector	TZL-P11P-A1				
CN103	UE0129	Connector	DF9A-9S-1V				
W101	UX1003	Wire	DJF5W3				
W102	MTDJ06AA	Wire	#26T 2 - 6 - 2				
W103	UP0217	PCB	Flexible Printed Circuit Board				
W104	MRDJH4AA	Wire	#26R02 -045 -02				
	RV0014	Pot. meter	RK09722115R1211 (10KB x 2)				
	RV0015	Pot. meter	RK0972210 (10KB x 2)				
	UR0006	Encoder	EC09P20-51				
	ED0002	Battery	Lithium Battery BR1225-1VF				
	UP0215B	PCB	IF Circuit Board B				
	TZ0021		Insulator				
	TZ0048		Lithium Battery Insulator				
	TZ0056		VCO Shield K1				
	TS0073		CPU Shield F5				

## 870 Unit / Jack Unit

Ref. No.	Parts No.	Description	Parts Name	Ref. No.	Parts No.	Description	Parts Name
870 Unit				Jack Unit			
Q401	XT0030	Transistor	2SC3356 T1BR25	JK601	UJ0019	Jack	HSJ1423-01-010
Q402	XT0030	Transistor	2SC3356 T1BR25	JK602	UJ0019	Jack	HSJ1423-01-010
				JK603	UJ0022	Jack	HSJ1102-01-540
C401	CU3006	Chip C.	CM105 CH 050C 50VAT	R601	RK3050	Chip R.	MCR03 EZ0J 103
C402	CU3002	Chip C.	CM105 CH 010C 50VAT	R602	RK3026	Chip R.	MCR03 EZ0J 101
C403	CU3005	Chip C.	CM105 CH 040C 50VAT	R605	RK3050	Chip R.	MCR03 EZ0J 103
C404	CU3004	Chip C.	CM105 CH 030C 50VAT				
C405	CU3035	Chip C.	CM105 W5R 102K 50VAT	C601	CU3035	Chip C.	CM105 W5R 102K
C406	CU3006	Chip C.	CM105 CH 050C 50VAT	C602	CU3035	Chip C.	CM105 W5R 102K
C407	CU3005	Chip C.	CM105 CH 040C 50VAT	C603	CU3035	Chip C.	CM105 W5R 102K
C408	CU3003	Chip C.	CM105 CH 020C 50VAT	C604	CU3035	Chip C.	CM105 W5R 102K
C409	CU3005	Chip C.	CM105 CH 040C 50VAT	C605	CU3035	Chip C.	CM105 W5R 102K
C410	CU3006	Chip C.	CM105 CH 050C 50VAT	C606	CU3035	Chip C.	CM105 W5R 102K
C411	CU3003	Chip C.	CM105 CH 020C 50VAT	C607	CU3035	Chip C.	CM105 W5R 102K
C412	CU3003	Chip C.	CM105 CH 020C 50VAT				
C413	CU3035	Chip C.	CM105 W5R 102K 50VAT	D601	XD0120	Diode	MA704WK
C598	CU3035	Chip C.	CM105 W5R 102K 50VAT				
R401	RK3046	Chip R.	MCR03 EZ0J 472				
R402	RK3052	Chip R.	MCR03 EZ0J 153				
R403	RK3032	Chip R.	MCR03 EZ0J 331				
R404	RK3026	Chip R.	MCR03 EZ0J 101				
R406	RK3068	Chip R.	MCR03 EZ0J 334				
R407	RK3042	Chip R.	MCR03 EZ0J 222				

Ref. No.	Parts No.	Description	Parts Name	Ref. No.	Parts No.	Description	Parts Name
Battery Case				Others			
	KD0023		Battery Case		KM0120		Front Case
	KF0019		Battery Case		KB0036		Rear Case
	SD0006A		Terminal B		FG0085		Ten Key
	SD0007A		Terminal C		FG0086		Sub Key
	SD0012		Plus Terminal		FG0080		DC Jack Cover
	SD0013		Minus Terminal		FG0081		Rubber Shield
	SD0014		Plus Terminal		FG0082		PTT Rubber
	SD0015		Minus Terminal		NB0043		Release Knob
	PR0146		Caution Label		FP0054		Terminal Base
					DP0062		LCD Panel
					FG0078		SP Rubber
					FG0079		MIC Rubber
					YZ0113		Panel Tape
					YZ0058		Cop. Wire 0.4 1mm
					TG0012		SP Net
					AN0012		Dial Nut
					UE0029A		BNC Receptacle
					NK0024A		VOL Knob
					NK0025		Dial Knob
					NW0007		SQL Knob
					UR0006		Pulse SW
					TS0060		LCD Earth Plate A
					TS0062		LCD Earth Plate B
					TS0043		Terminal Earth Plate
					TS0069		Earth Plate
					UT0024		Terminal
					ST0029		SP Holder
					FM0056		Terminal Base Plate
					SS0050		VOL Angle
					TS0059		IF Shield
					TS0065		ANT Shield
					SA0011		Angle Boss
					SA0010		IF Boss
					AS0155		Screw Set
					YZ0044		Screw Lock 1401C
					TS0066		Flex Shield
					YZ0041		Cop. Tape Width 8mm
					YZ0013		Hot Melt TC3764 (3M) 1G x 1

Packing / Screw List / CTCSS Unit

Ref. No.	Parts No.	Description	Parts Name
<b>Packing</b>			
	BH0008A AA0020		Battery Case (TD/ED only) Bolt Hook
	EA0021		Bottom Cover
	PH0004		Antenna
	PS0151		Registration Card
	PT0004A		Instruction Manual
			Lot Number Seal
	PK0033		Schematic Diagram
	PR0094		Seal (DJ580TA only)
	HK0265		Item Carton Box (DJ580T)
	HK0266		Item Carton Box (DJ580E)
	HK0267		Item Carton Box (DJ580TD)
	HK0268		Item Carton Box (DJ580ED)
	HH0030		Polystyrene Foamed Fixture
	HH0031		Polystyrene Plate
	HH0036		Polystyrene Plate
	DS0225		Model Name Plate (DJ580T)
	DS0226		Model Name Plate (DJ580E)
	DS0227		Model Name Plate (DJ580TD)
	DS0228		Model Name Plate (DJ580ED)
	DS0240		Model Name Plate (DJ580TA)
	HM0092		10 sets Carton Box (DJ580T)
	HM0093		10 sets Carton Box (DJ580TD)
	HH0037		Carton Cushion (DJ580T)
	HH0038		Carton Cushion (DJ580TD)
	EG0014		Ni-Cd Battery Pack (T/E/TA)
	EDC-24		(DJ580T only)
	EDC-25A		(DJ580E/TA only)
	HP0031	Protection Bag	Unit 100 x 200
	HP0028		(Instruction Manual) 165 x 280
<b>Screw List</b>			
	AF0008	Screw	2 + 3.5 Fe Ni
	AF0018	Screw	2 + 4 Fe BC
	AF0016	Screw	2 + 2 Fe BC
	AF0020	Screw	2 + 3 Fe Ni
	AF0014	Screw	2.6 + 3.5 Fe Ni
	AF0001	Screw	2.6 + 6 Fe
	AP0003	Screw	P 2 + 16 Fe BC

Ref. No.	Parts No.	Description	Parts Name
<b>CTCSS Unit</b>			
IC701	XA0163	IC	MX365LG-TR
Q701	XT0037	Transistor	2SC2412L T96R
D701	XD0040	Diode	DAN202K T96R
VR701	RH0060	Trim. pot	MVR32 HXBRN473
X701	XB0006	Cristal	CSB1000J 221
CN701	UE0132	Connector	DF9A-9P-AV(22)
C701	CU3060	Chip C.	CM105 CH 221K
C702	CU3060	Chip C.	CM105 CH 221K
C703	CU3059	Chip C.	CM105 Y5V 104Z
C704	CU3047	Chip C.	CM105 W5R 103K
C705	CS0060	Chip Tantal	TMC 1E 474TR
C706	CS0060	Chip Tantal	TMC 1E 474TR
C707	CU3047	Chip C.	CM105 W5R 103K
C708	CU3059	Chip C.	CM105 Y5V 104Z
C709	CU3059	Chip C.	CM105 Y5V 104Z
C710	CU3059	Chip C.	CM105 Y5V 104Z
C711	CS0060	Chip Tantal	TMC 1E 474TR
R701	RK3074	Chip R.	MCR03 EZHJ 105
R702	RK3064	Chip R.	MCR03 EZHJ 154
R703	RK3040	Chip R.	MCR03 EZHJ 152
R704	RK3022	Chip R.	MCR03 EZHJ 470
R705	RK3067	Chip R.	MCR03 EZHJ 274
R706	RK3059	Chip R.	MCR03 EZHJ 563
R707	RK3074	Chip R.	MCR03 EZHJ 105
R708	RK3073	Chip R.	MCR03 EZHJ 824
R709	RK3038	Chip R.	MCR03 EZHJ 102
R710	RK3070	Chip R.	MCR03 EZHJ 474
	UP0213		Tone Squelch Unit
	YZ0042		Adhesion

# Adjustment

## 1) Required Test Equipment

### 1. Regulated Power Supply

Supply voltage: 2V to 15V  
Current: 2A or more.  
Standard voltage: 13.8V

### 2. Frequency Counter

Measurable frequency: Up to 1GHz  
Measurements stability: 0.2ppm or so

### 3. Power Meter

Measurable frequency: Up to 500MHz.  
Impedance: 50Ω, unbalanced.  
Measuring range: Full scale of 100W or so.

### 4. Linear Detector

Measurable frequency: Up to 500MHz.  
Characteristics: Flat  
CN: 60dB or more.

### 5. Digital Multimeter

Voltage range: FS = 18V or so.  
Input resistance: 1MΩ or more.

### 6. Oscilloscope

Measurable frequency: DC to 30MHz.

### 7. AF Voltmeter

Measurable frequency: 50Hz to 1MHz.  
Maximum sensitivity: 1mV or more.

### 8. Spectrum Analyzer

Measuring range: DC to 2GHz or more.

### 9. SSG

Maximum frequency: 1GHz or more.  
Output: -20dB/0.1μV to 120dB/1V.  
Output Impedance: 50Ω, unbalanced.

### 10. Dummy Load

Impedance: 8Ω  
Dissipation: 100W or more.

### 11. Distortion Meter

Measurable frequency: 30Hz to 100KHz.  
Input level: 50mV to 10V rms.

## 2) Adjustment for DJ580T/TD

### TX-RX Common Adjustment

Item	Condition	Measurement		Adjustment			Specifications/ Remarks
		Test-equipment	Terminal	Unit	Parts	Method	
Backup Voltage	Power off	Digital multimeter	D116 TP3			Check	2.8V or more

### PLL Adjustment

Item	Condition	Measurement		Adjustment			Specifications/ Remarks
		Test-equipment	Terminal	Unit	Parts	Method	
Reference Frequency	Frequency: 445.00MHz PTT: ON	Frequency Counter	ANT	RF	TC406		445.00000MHz
UHF TX VCO	Frequency: 445.00MHz PTT: ON Power: Middle	Digital multimeter	TP1	U-VCO	L433		1.5 ~ 1.7V
UHF RX VCO	Frequency: 445.00MHz	Digital multimeter	TP1	U-VCO	L432		1.8 ~ 2.2V
VHF VCO	Frequency: 145.00MHz	Digital multimeter	TP2	V-VCO	L441		2.0 ~ 2.1V

### RX Adjustment

Item	Condition	Measurement		Adjustment			Specifications/ Remarks
		Test-equipment	Terminal	Unit	Parts	Method	
Receive Sensitivity	Freq: 445.05MHz SSG mod: 1KHz Power Supply Voltage: 6V	SSG Oscilloscope AF Voltmeter Distortion meter	SP	RF	TC401 ~ TC405	12dB SINAD: MAX	12dB SINAD -7.5dbμV (EMF)
	Freq: 145.05MHz SSG mod: 1KHz Power Supply Voltage: 6V			RF	L422, L424 ~ L428	12dB SINAD: MAX	12dB SINAD -7.5dbμV (EMF)
S Meter	Freq: 445.05MHz SSG output: 15dBμV (EMF)			IF	VR103	Full	+10 ~ +25dBμV (EMF)
	Freq: 145.05MHz SSG output: 15dBμV (EMF)			IF	VR104	Full	+10 ~ +25dBμV (EMF)

## TX Adjustment

Item	Condition	Measurement		Adjustment			Specifications/ Remarks
		Test-equipment	Terminal	Unit	Parts	Method	
Power	1) Before adjustment	Power meter Spectrum Analyzer	ANT	IF	VR109	MAX	
	2) Freq: 445.00MHz PTT: ON Power: High			RF	L402		spurious below -60dBc
	3) Freq: 445.00MHz PTT: ON Power: High			IF	VR109		5.0 ~ 5.3W
	4) Freq: 445.00MHz PTT: ON Power: Middle			IF	VR108		1.0W
	5) Freq: 445.00MHz PTT: ON Power: Low			IF	VR110		0.1 ~ 0.25W
	6) Freq: 145.00MHz PTT: ON Power: High			RF	VR401		5.0 ~ 5.3W
	7) Freq: 145.00MHz PTT: ON Power: Middle					Check	0.8 ~ 1.5W
	8) Freq: 145.00MHz PTT: ON Power: Low					Check	0.1 ~ 0.6W
DEV	1) Freq: 445.00MHz AG output: 1KHz, -30dBm PTT: ON Power: Low	Power meter AG Liner detector	ANT	IF	VR105		4.7KHz/DEV
	2) Freq: 145.00MHz AG output: 1KHz, -30dBm PTT: ON Power: Low			IF	VR106		4.7KHz/DEV
DTMF	Freq: 445.00MHz PTT: ON Power: Low Push "1" key on keypad			IF	VR107		3KHz/DEV
CTCSS (88.5Hz)	Freq: 445.00MHz PTT: ON Power: Low with Tone SQL Unit			Tone SQL	VR701		800Hz/DEV



### 3) Adjustment for DJ580E/ED

#### TX-RX Common Adjustment

Item	Condition	Measurement		Adjustment			Specifications/ Remarks
		Test-equipment	Terminal	Unit	Parts	Method	
Backup Voltage	Power off	Digital multimeter	D116 TP3			Check	2.8V or more

#### PLL Adjustment

Item	Condition	Measurement		Adjustment			Specifications/ Remarks
		Test-equipment	Terminal	Unit	Parts	Method	
Reference Frequency	Frequency: 435.00MHz PTT: ON	Frequency Counter	ANT	RF	TC406		435.00000MHz ±100Hz
UHF TX VCO	Frequency: 435.00MHz PTT: ON Power: Middle	Digital multimeter	TP1	U-VCO	L433		1.3 ~ 1.8V
UHF RX VCO	Frequency: 435.00MHz		TP1	U-VCO	L432		1.8 ~ 2.2V
VHF VCO	Frequency: 145.00MHz		TP2	V-VCO	L441		2.0 ~ 2.1V

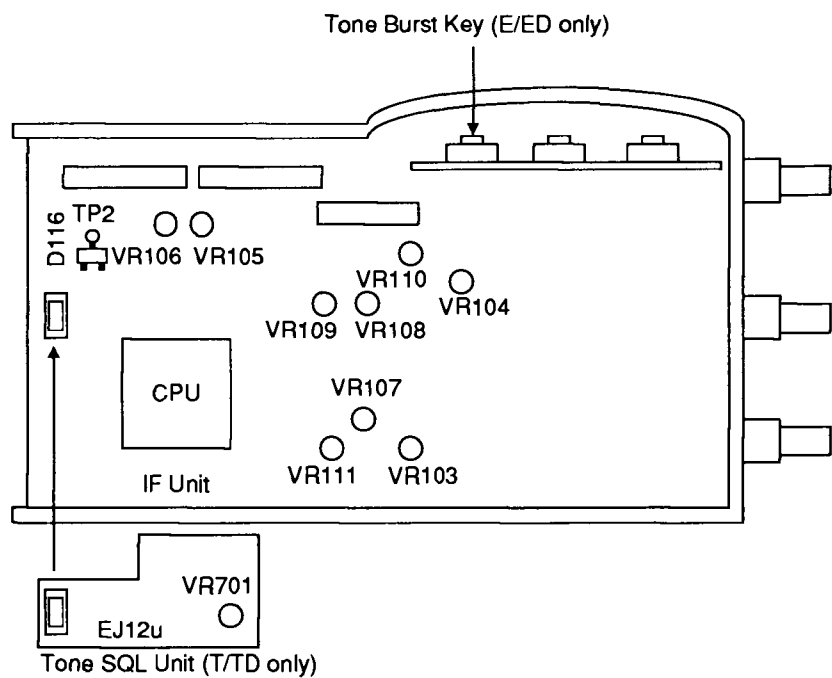
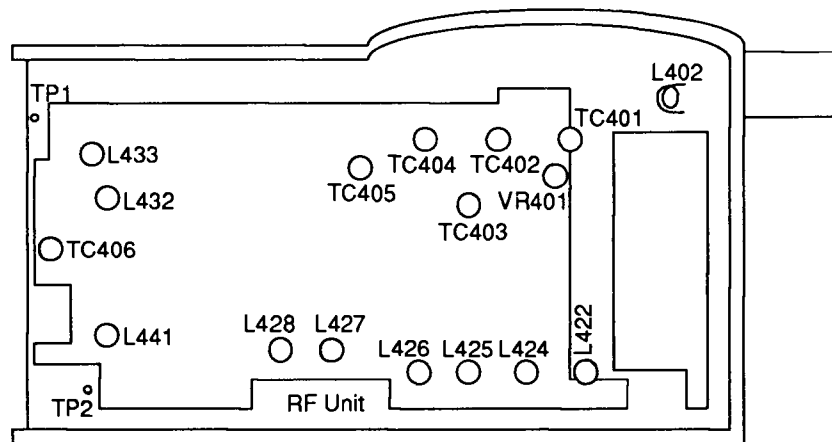
#### RX Adjustment

Item	Condition	Measurement		Adjustment			Specifications/ Remarks
		Test-equipment	Terminal	Unit	Parts	Method	
Receive Sensitivity	Freq: 435.05MHz SSG mod: 1KHz Power Supply Voltage: 6V	SSG Oscilloscope AF Voltmeter Distortion meter	SP	RF	TC401 ~ TC405	12dB SINAD: MAX	12dB SINAD -7.5dBμV (EMF)
	Freq: 145.05MHz SSG mod: 1KHz Power Supply Voltage: 6V			RF	L422, L424 ~ L428	12dB SINAD: MAX	12dB SINAD -7.5dBμV (EMF)
S Meter	Freq: 435.05MHz SSG output: 15dBμV (EMF)			IF	VR103	Full	+10 ~ +25dBμV (EMF)
	Freq: 145.05MHz SSG output: 15dBμV (EMF)			IF	VR104	Full	+10 ~ +25dBμV (EMF)

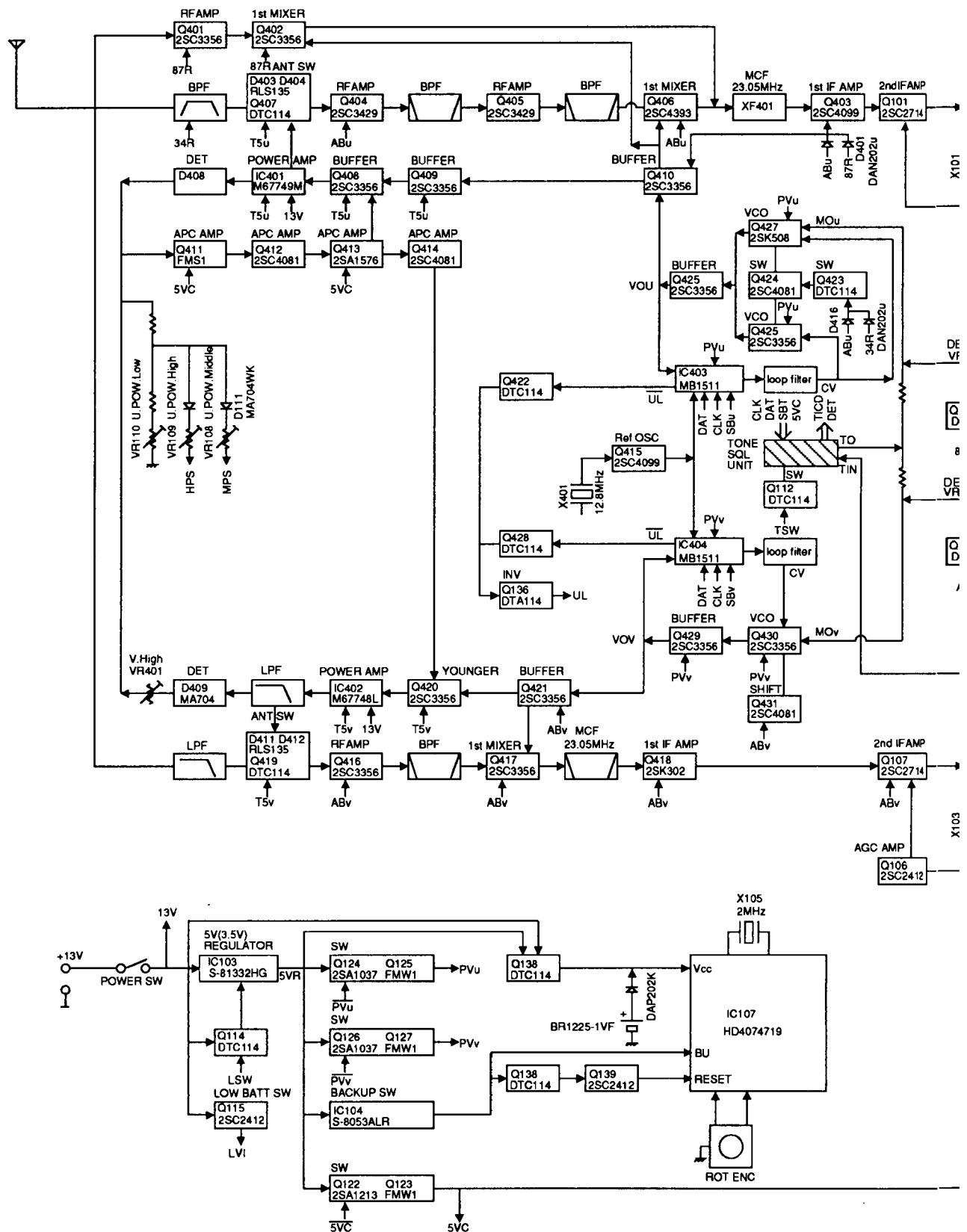
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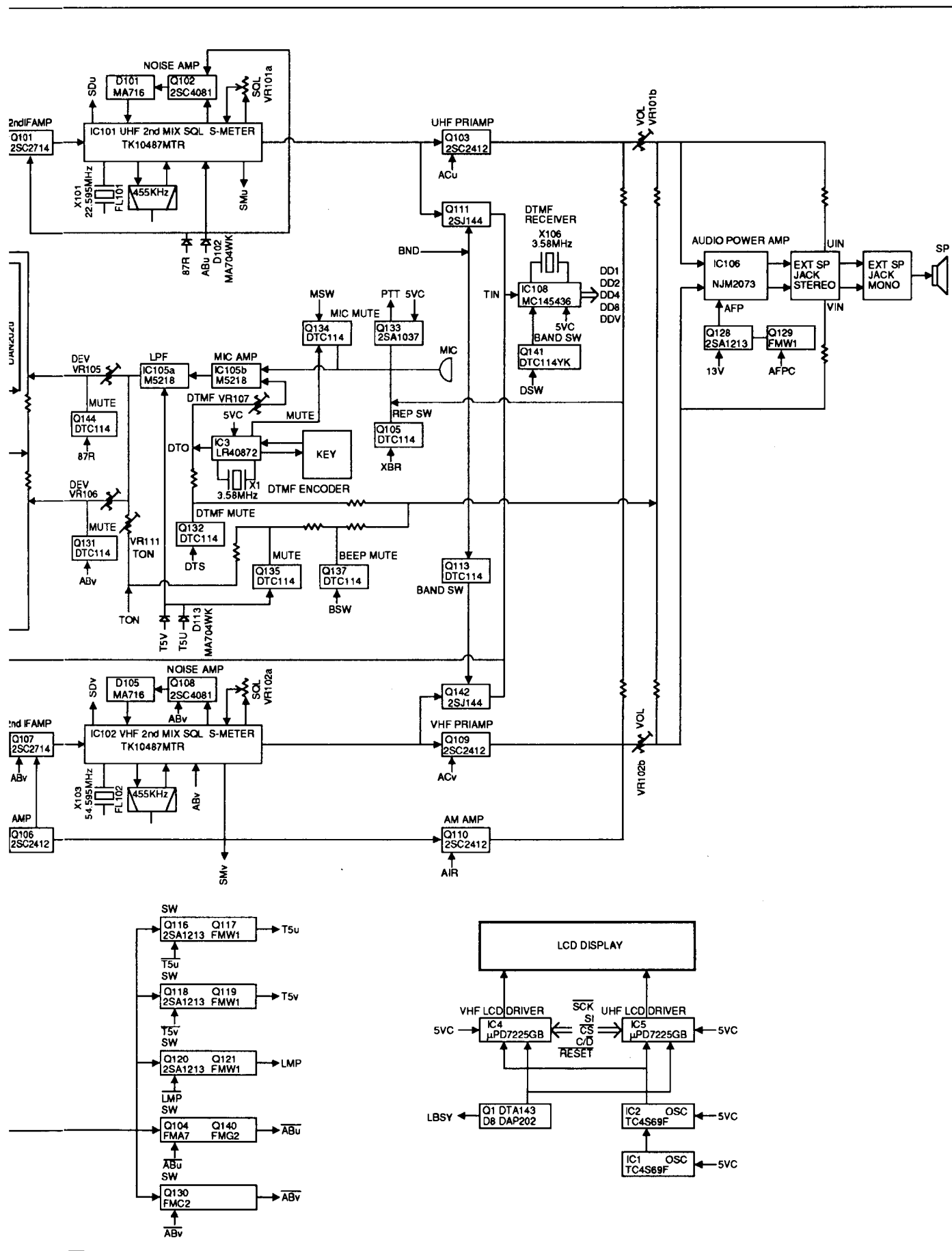
Item	Condition	Measurement		Adjustment			Specifications/ Remarks
		Test-equipment	Terminal	Unit	Parts	Method	
Power	1) Before adjustment	Power meter Spectrum Analyzer	ANT	IF	VR109	MAX	
	2) Freq: 435.00MHz PTT: ON Power: High			RF	L402		spurious below -60dBc
	3) Freq: 435.00MHz PTT: ON Power: High			IF	VR109		5.0 ~ 5.3W
	4) Freq: 435.00MHz PTT: ON Power: Middle			IF	VR108		1.0W
	5) Freq: 435.00MHz PTT: ON Power: Low			IF	VR110		0.1 ~ 0.25W
	6) Freq: 145.00MHz PTT: ON Power: High			RF	VR401		5.0 ~ 5.3W
	7) Freq: 145.00MHz PTT: ON Power: Middle					Check	0.8 ~ 1.5W
	8) Freq: 145.00MHz PTT: ON Power: Low					Check	0.1 ~ 0.6W
DEV	1) Freq: 435.00MHz AG output: 1KHz, -30dBm PTT: ON Power: Low	Power meter AG Liner detector	ANT	IF	VR105		4.5KHz/DEV
	2) Freq: 145.00MHz AG output: 1KHz, -30dBm PTT: ON Power: Low			IF	VR106		4.5KHz/DEV
DTMF	Freq: 435.00MHz PTT: ON Power: Low Push "1" Key on keypad			IF	VR107		3KHz/DEV
1750Hz Tone	Freq: 435.00MHz PTT: ON Power: Low			IF	VR111		3KHz/DEV

#### 4) Adjustment Points



# Block Diagram

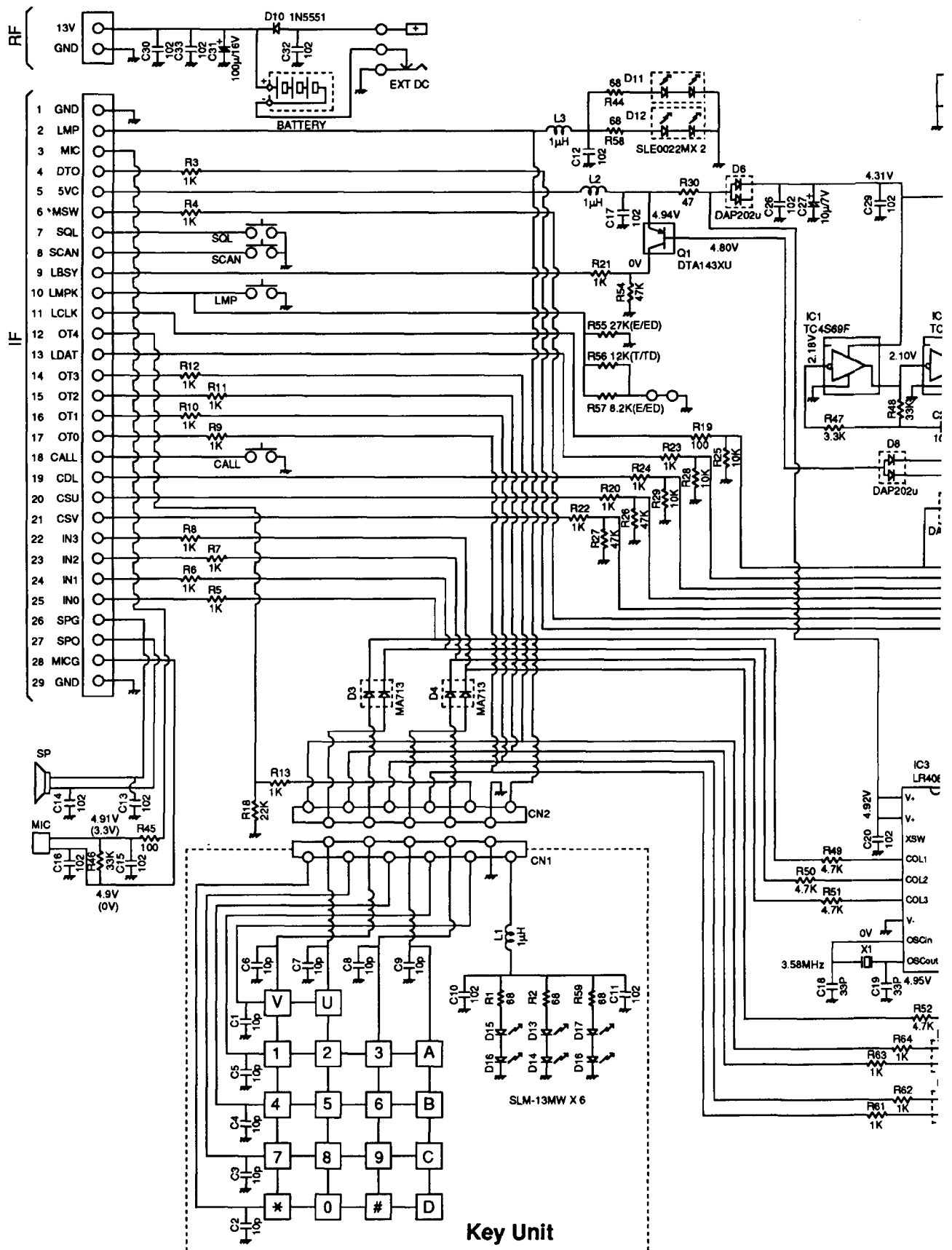


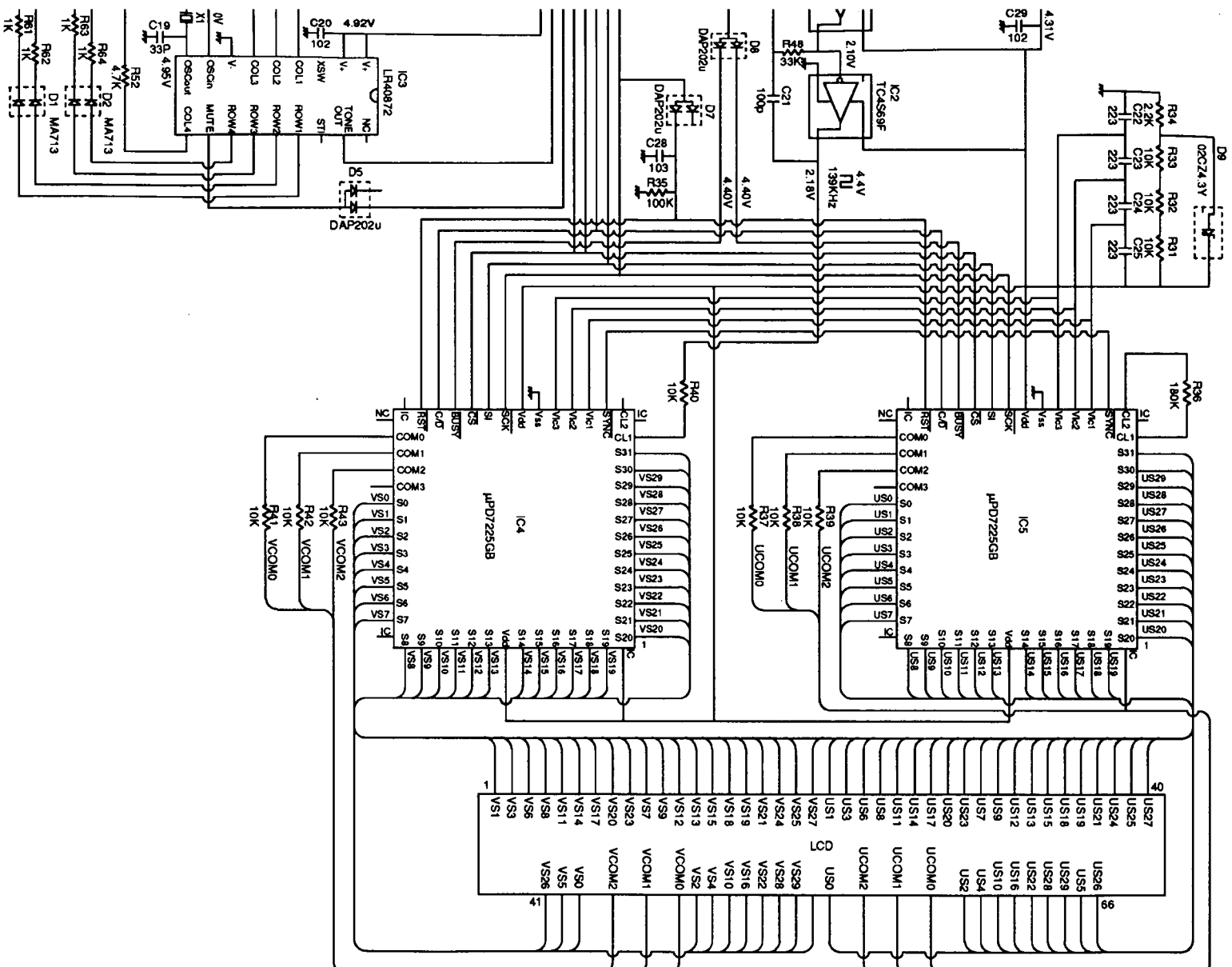


# Circuit Diagrams

## 1) LCD Unit

4P0217

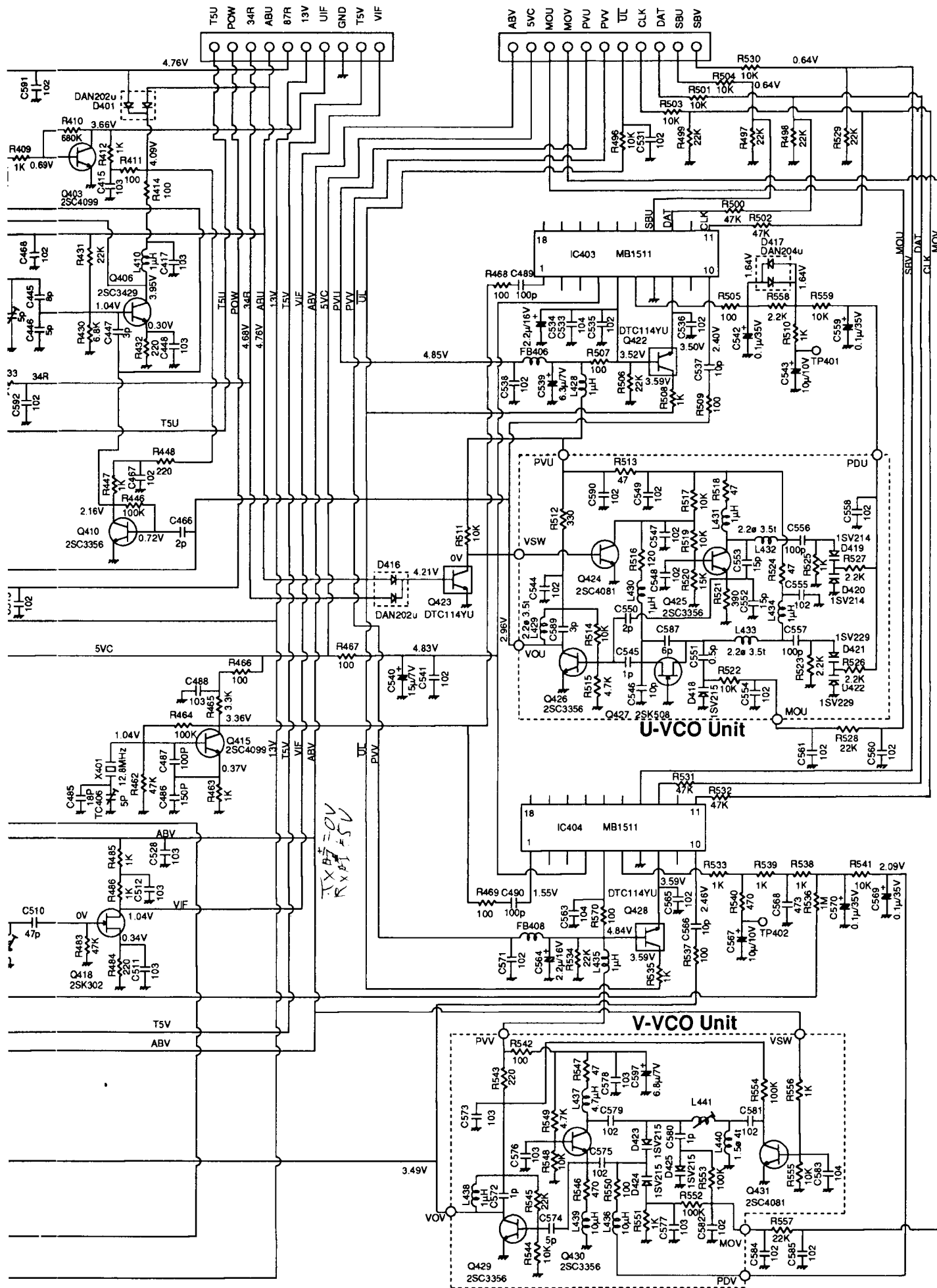




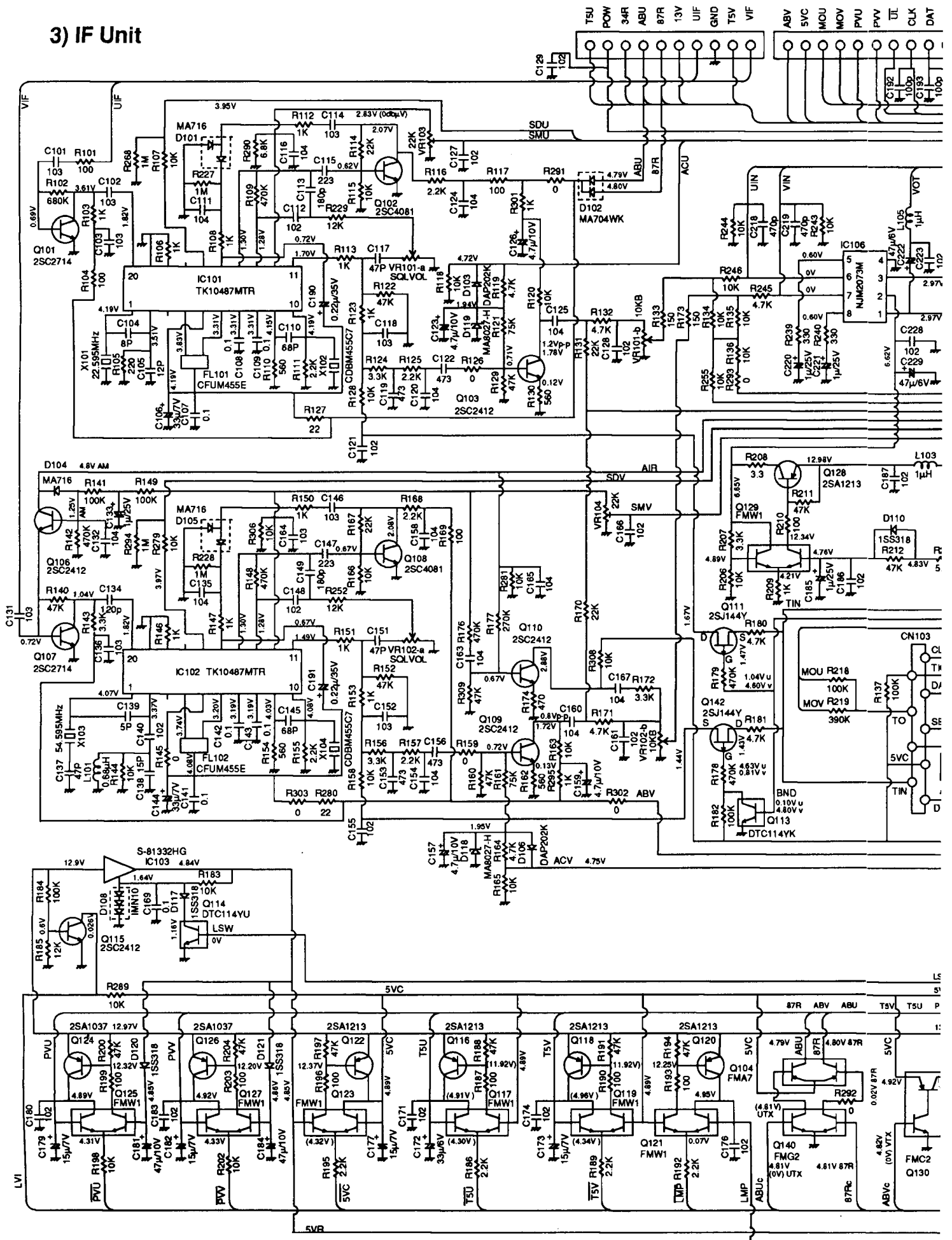
**870 Unit**





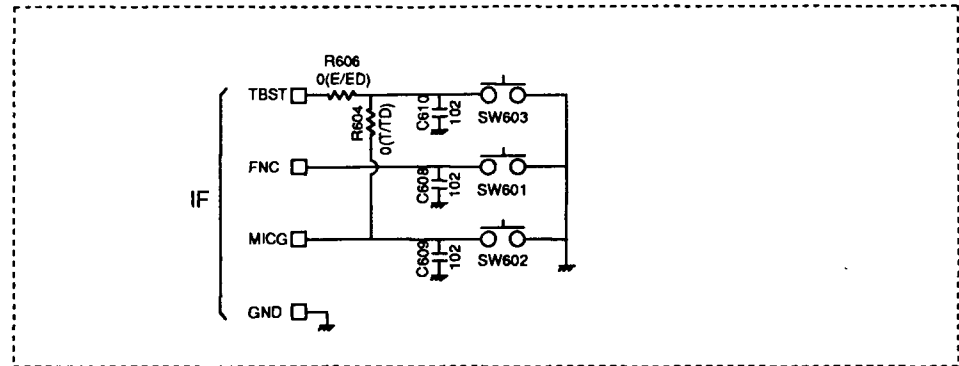


### 3) IF Unit

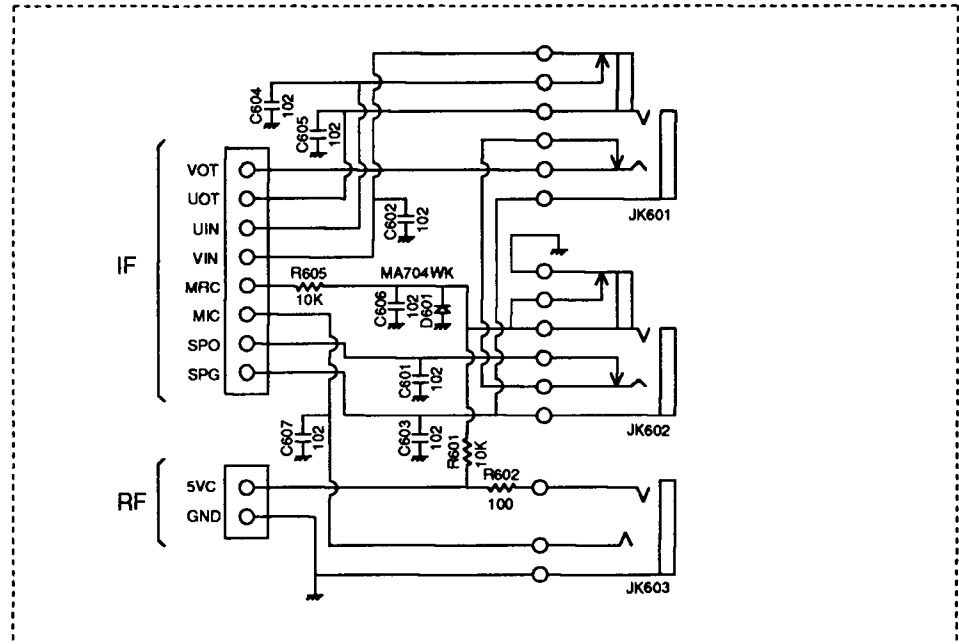




#### 4) SW Unit



#### 5) Jack Unit



#### 6) CTCSS Unit DJ580T/TD ,TA only

